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Coming to know reflective practice: An ethnography of novice university teachers

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COMING TO KNOW REFLECTIVE PRACTICE: AN ETHNOGRAPHY OF NOVICE UNIVERSITY TEACHERS

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DEDICATION

Everything I know about teaching I have learned from my students.

This dissertation is dedicated to them.

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ABSTRACT

COMING TO KNOW REFLECTIVE PRACTICE: AN ETHNOGRAPHY OF NOVICE UNIVERSITY TEACHERS

by

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University of New Hampshire, May, 2007

This ethnography investigates the cultural construction of reflection about teaching. The central setting was a two-semester practicum and seminar course in college teaching for psychology Ph.D. candidates in their third year of study at a four-year public university. Key participants were two male and two female doctoral students. Other participants included the two tenured faculty members who supervised the practicum and seminar.

Reflection was defined as the purposeful deliberation of anticipated and/or past teaching behavior, and included examination of relevant assumptions, values and beliefs. The purpose of the study was to describe and understand the reflective processes about teaching demonstrated by key participants operating within the setting.

Methods included participant observation over two semesters of the practicum and seminar; semi-structured interviews; observation of participant teaching; and collection of teaching artifacts. Data analysis included construction of field notes and memos, the coding of information units, and the

use of an interpretive framework on reflective thinking. Case studies were developed for each key participant using a narrative and analysis approach.

This study revealed that participant reflection was influenced by a variety of factors, including the belief systems and experiences of participants, and the social and structural elements of the practicum and seminar. Individual participants demonstrated significantly different meanings of reflection, and their behaviors indicated that the development of reflective attitudes is a continuous negotiation between self and environment. The nature of problem framing emerged as a significant factor in determining the nature of reflective behavior. Results indicate a need for future inquiry into the elements influencing the reflective process of novice university teachers.

CHAPTER I

RESEARCHING THE PREPARING FUTURE FACULTY COMPONENT OF THE PH.D. IN PSYCHOLOGY

Christian[1] looked straight at the others and said: "I have absolutely no idea what you're going to face. Just be absolutely willing to change." Seated on chairs and sofas, the eight second-year doctoral students listened intently as the third-year cohort, fresh from teaching a year's worth of introductory psychology, shared their experiences and advice. In three months, the second-year group would be standing in front of their first classrooms, just as the third-year students had a year before. The "experienced" teachers cautioned the others about teaching challenges they faced, described how they adapted to them, and offered insights into their new teaching identities.

Students sense instructor weakness, warned Julia. "They'll catch you for not having a deep enough knowledge base. The one time that you feel like you are less prepared, they'll get you. They'll ask you a question." Stacey described a class on sleep disorders where students "bombarded" her with questions she could not answer.

Beware of the student assumption, said Marcus, that the textbook and the instructor are sources of absolute knowledge, something he struggled to change.

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[1] Names of all key participants, including the four cohort members and two supervising faculty, are represented by pseudonyms.

Consider the value of class discussion, he suggested, where students can construct interpretations of course material.

Boundaries between students and teachers are continually tested, they said. A woman in Stacey's class challenged her authority daily, a situation she was able to adapt to by recognizing the factors outside of class that affected her student's behavior. When a student disrupted his class with inappropriate talk, Marcus addressed it by creating a climate of mutual respect in the classroom. Julia advised that the new teachers think early about "the way your students see you. Not only how you present yourself in the classroom, but how you deal with their issues outside of class."

Thinking about the best way to adapt is important, they advised. Christian described his process of organizing course material to match the developmental levels of his first-year students. Julia suggested that teaching behaviors always be assessed in the light of teaching goals: "If you're going to move something around that may be confusing, you want to make sure that you're doing it for a purposeful reason." Presenting the structure of the brain and nervous system early in the semester, she said, allowed her to connect subsequent topics with the physiological factors affecting behavior.

After a year in the classroom, did the third-year students feel they knew how to teach? They were certainly more confident than at the start, said Julia, but, "I don't think any of us feel like we've got it right or have it down." She described moving from an initial concern about effectively presenting the material to how and whether her students were learning. Still, she said, it was naïve to

assume that any changes made as a teacher were permanent: "I'm still working on it. I will always work on it, because students change. You change." Christian said he was still "trying," still looking for ways to help students "figure out what they're supposed to learn." Marcus suggested that no one set of teaching standards existed. Instead, he found that a willingness to try new ways of teaching that were based upon an honest attempt to understand the student perspective served him well. Overall, said Stacey, be willing to change as you move through your teaching, "whether or not your course was perfect. It won't be perfect. Make a change just to experiment."

Finally, Stacey offered encouragement: "I think that you should all know that you'll probably be some of the best teachers [students] had, because you're new and you have high energy going in, and you're really interested in helping them learn, and you're really engaged in the process of that first semester."

This conversation occurred at the May 2006 "Fish Bowl" at the University of New Hampshire's department of psychology. A decades-long tradition, the "Fish Bowl" is an opportunity for novice teachers in the doctoral program, and those about to teach their first class, to share insights about college teaching. Earning national recognition from the American Psychological Association, this Ph. D. path at UNH is distinguished from traditional programs. Emphasis is placed upon the simultaneous development of research and teaching skill. All doctoral students enroll in a teaching practicum and seminar in the third year of study, where they engage in structured and ongoing conversations about

teaching. As well, they teach one section of an introductory psychology class in the fall and spring semesters.

Marcus, Stacey, Christian and Julia represented the third-year cohort of 2005-6. A year before the 2006 "Fish Bowl," they began their focused study on teaching. Over the subsequent fall and spring semesters, as teachers in their own classrooms, they encountered numerous challenges, recognized some successes, and developed a sense of what it means to teach—all within the context of a secure environment that encouraged discovery and guided practice. The "Fish Bowl" was the first time they articulated to less experienced others the insights they had gained.

How did these four graduate students develop into articulate, informed and confident practitioners? Why is their preparation as future faculty significant for higher education today?

The Context of the Research

Representing the Association of American Colleges and Universities (AAC&U), a national panel published a report in 2002 on the challenges to higher education in a knowledge-based world. *Greater Expectations: A New Vision for Learning as a Nation Goes to College,* describes a profile of today's college student that is markedly different from that of any other time in the history of higher education. According to the report, over 70% of today's high school graduates go on to post-secondary education; fewer than half of secondary school graduates complete a college preparatory program; 40% of college students are enrolled in remedial courses. Most colleges admit everyone who is

qualified, and only 20-30% use a selective admissions process. These new populations bring new challenges to the college teacher: "We have opened the doors of college without taking full accounting of what it will actually take to help students reap the potential benefits of college" (Schneider & Stevenson, 1999, p. 20).

Not only have student demographics changed, but transformations from an industrial- to a knowledge-based global culture call into question some of the basic tenets of a liberal education. Students in the 21st century, the Association of American Colleges & University panel contends, will need to adapt to changing environments in ways their parents never experienced. They will need to "integrate knowledge from different sources, and continue learning throughout their lives" (2002, p. xi). The technological revolution, the information explosion, changes in the workplace, economic globalization--in a time of decreasing government funding—require that higher education rethink its purpose, practices and epistemologies.

Academia has always changed in response to social demands, though this change has been slow. Contributing to the inertia are traditional views about the relative merits of research and teaching, and a lack of a shared vision about what students should gain from college. "The university still tends to frame its contemporary roles largely within traditional paradigms. It resists major changes in curricula or pedagogy. Students continue to be evaluated and credentialed relative to 'seat time' rather than learning outcomes" (Duderstadt, Wulf, & Zemsky, 2003, pp. 37-38).

The problem, says the Association of American Colleges & Universities (2002), is that many college faculty are unaware of or uneducated about the meaning and practice of learning theory, and they operate within an environment that may be antithetical to its assumptions. Shepard (2000) contends that the pedagogy of the typical college teacher is influenced by assumptions that define learning as an accumulation of discreet knowledge units that are transferred to students by experts. Assumptions that learning is sequenced and hierarchical, that it is best assessed by normative measurement, and motivated predominantly by external forces, remain. Changing these perspectives requires nothing less than "a fundamental redefinition of the act of teaching" (Darling-Hammond, 2000, p. 6).

The Association of American Colleges and Universities (2002) says that this redefinition requires several new understandings and behaviors. Faculty must understand how their students learn, discover the elements for creating fertile learning environments, and reexamine curricula and assessment. As teaching is integral to learning, faculty must also adopt a repertoire of teaching practices, and create authentic learning experiences for their students. Grounding these mandates is the assumption that teaching is a reflective and "intentional act," informed by understandings about cognition and epistemology (Chism, Lees, & Evenbeck, 2002).

A fertile place to evidence these changes is at the beginning. Most faculty start teaching as graduate teaching assistants (Hoffer et al., 2003). Graduate teaching assistantship (GTA) programs vary considerably in the ways they

introduce novice teachers to their roles as instructors. Some programming relies solely on pre-service orientation, reinforcing the notion that graduate students are isolated and passive learners whose personal epistemologies are irrelevant to their preparation as experts, and who do not need sustained guidance to teach successfully (Pallas, 2001; Putnam & Borko, 2000). There is a pervasive belief that once graduate teaching assistants have negotiated two or three sections of a freshman course they have earned competency as teachers.

At the doctoral level, preparation has been designed around teaching novice scholars the inquiry methods of their disciplines so that they can become researchers. This is traditionally accomplished through an apprenticeship model, where students work under the supervision of a master scholar (Golde & Dore, 2001). In this climate, emphasis on research almost always eclipses teaching development, a tradition the Association of American Colleges and Universities (2002) report addresses specifically by calling for a reformation of doctoral education "so college professors are prepared to be effective educators as well as scholars" (p. 16).

In a survey of 27 universities, Golde and Dore (2001) concluded that today's doctoral programs are often significantly deficient in providing students the experience they need to succeed as new college teachers. They describe the "naïve optimism" of doctoral students who desire a faculty career, a career that fewer than half will attain. Most graduates will not secure a research position, although almost three-quarters of respondents wished to do so. Of those who secure positions in higher education, most will spend a majority of their time

teaching, although only 36.1% felt their graduate programs had prepared them to teach lecture courses—despite the fact that half will have served time as teaching assistants. One respondent to the survey said, "My department is very focused on churning out researchers and does not encourage students to excel at teaching" (p. 19). The Association of American Colleges and Universities (2002) report offered several recommendations regarding the preparation of teachers, including critical assessment of the adequacy of teacher preparation and implementation of "opportunities for developing students as effective teachers" within Ph. D. programs (p. 46). An investigation by Nyquist and Woodford (2000) indicated a concern about the preparation of future faculty:

> Lack of pedagogical training means that new faculty are not prepared to teach today's students. . . . The main preparation for new faculty has been teaching assistantships, so they are limited in their teaching repertoire by the nature of their particular assignment—usually in a discussion section or a large lecture class, often without supervision or adequate mentoring. (p. 10)

Investigating the experiences of new university faculty, Boice (1992) discovered that teaching responsibilities compromised the ability of pre-tenure faculty to establish a scholarship record. Department chairs, faculty and graduate students believe that inadequate teaching preparation has significant implications for success in faculty positions (Benassi, O'Brien, & Seidel, 1998; Golde & Dore, 2001).

In recent years, institutions have begun to recognize the need for a new emphasis on teaching. At graduate and faculty levels, a variety of new efforts have focused on the development of pedagogy with the same rigor and regard as

the acquisition of research skills (Benassi & Fernald, 1993; Diamond & Adam, 1997; Gaff & Lambert, 1996; Tice, Gaff, & Pruitt-Logan, 1998).

Personal Journey to the Inquiry of Teaching

Unlike the doctoral students sharing experiences in the "Fish Bowl," my introduction to college teaching, as a graduate student in the 1970s, was not preceded by careful and guided development of my teaching skill. Like almost everyone else then and since, I was given course materials, some brief guidelines, and expected to teach. Learning to teach, then, was largely an unstructured series of personal discoveries over twenty years in the college classroom.

As a residential faculty member in English at the University of New Hampshire at Manchester, a college of the university, a fortunate turn of events allowed me to reflect upon and develop my teaching. Unlike most of my colleagues, I was awarded the rank of assistant professor early in my career, despite the absence of a terminal degree. While others were struggling under the weight of "ABD" status, or working their way up the tenure ladder, juggling teaching and research, I sailed in an area of calm.

Not concerned about building a research record, I had the time to educate myself about pedagogy. I read about the theory and practice of the profession and applied what I learned to my practice. I examined the teaching of others, mentored adjunct instructors, and worked closely with peer tutoring programs. I offered and engaged in workshops on faculty development and consulted with faculty on the creation of course material. I enrolled in several courses offered by

the university's Preparing Future Faculty program, and attended many conferences devoted to this issue.

As suggested by the Association of American Colleges and Universities (2002), I have had the opportunity, over time, to reflect, assess and redefine the act of teaching. Most of my colleagues have struggled to do so, and none of us began our faculty careers with graduate programs that initiated us, in purposeful ways, in the teaching of our lives. As classroom demographics and the mission of higher education changes, teaching faces new challenges. I wanted to revisit the beginning of college teaching, to witness the initiation of college teachers who would build their pedagogy in this new context.

The Emergence of a Research Focus

Deciding upon the setting for ethnographic inquiry always entails a set of assumptions and beliefs, even a tentatively defined research problem (Wolcott, 1999). My interest in the development of college teachers brought me to the doctoral program in psychology at the University of New Hampshire, where students are required to engage in the study and practice of teaching in the third year of the program.

My initial research questions when I entered the field in May of 2005 were appropriately broad: How does teaching identity emerge? How is it defined by the participants? A few weeks into field observation, my active participation allowed me to "enter the matrix of meanings of the researched, to participate in the system of organized activities, and to feel subject to their code of moral regulation" (Wax, 1980, pp. 272-273). The inductive and interactive nature of my

data collection shaped both my research focus and my understandings of the beliefs, values and behaviors of participants. From a general interest in teaching identity, I narrowed my inquiry to a specific behavior: reflection about teaching.

This occurred early in the fall semester, for two reasons. Participants met weekly in a seminar to discuss their teaching experiences and assigned readings. To open the session, the seminar instructor asked key participants how the week went, often inquiring whether they had encountered any "teaching dilemmas." The seminar became organized around the protocol of sharing worries, concerns and questions about teaching. Then, guided by the seminar instructor, the group unpacked the issue on the floor, discussing the nature and causes of the problem, and possible responses. An important function of the seminar, it seemed, was to reflect on problems in teaching practice.

A second spotlight on reflection came in the form of a precipitating event. One month into the fall seminar, the spring seminar instructor requested that key participants begin thinking about a "major change" to their course for the following semester. This would constitute a "risk," a "stretch," something that grew out of their identified teaching goals but that represented a distinct difference from the way they designed their fall class. Given that the key participants had barely begun their first semester teaching, the "Change" (as it came to be called), precipitated animated and ongoing discussion in the fall seminar. The theme of change based upon reflection emerged.

Statement of Purpose and Research Questions

The purpose of this study is to understand the processes of reflection on teaching behavior of third-year doctoral students in a teaching seminar/practicum by answering the following questions:

- What is reflected upon? When, why, how, and by whom?
- What cognitive processes are used to define and analyze points of reflection? When, why, how, and by whom?
- What conclusions or solutions are reached by participants as a result of these processes?
- What attitudes, beliefs, assumptions and emotions are factors in the reflective behavior of participants?

Outline of the Dissertation

In Chapter II, I describe the conceptual frameworks in reflective thinking upon which my inquiry is based. Additionally, I summarize relevant areas of research in teacher development, reflective practice and the preparation of future faculty.

In Chapter III, I explain my research method and assess the trustworthiness of my study. In Chapter IV, I describe the larger contextual factors, including the history and components of the University of New Hampshire's psychology department's doctoral program, and the Seminar and Practicum in the Teaching of Psychology. Using a narrative and analysis approach, I profile the behaviors and beliefs of the two faculty members who

taught the course during the time of my study. I describe how they elicited, framed and analyzed teaching problems, and how they guided group discussions relevant to reflection about teaching.

In Chapters V through VIII, using a case-study and narrative approach, I describe and analyze the behaviors of the four key participants relative to their engagement in reflection about teaching.

In Chapter IX, I explore the implications of my findings, draw comparisons among the case studies, and suggest areas of further inquiry.

Definition of Reflection

For the purposes of this study, "reflection" ("reflective action," "reflective teaching," "reflective practice") is defined according to the commonalities among seven theoretical approaches to reflection as identified by Rogers (2001). Reflection is the purposeful deliberation of anticipated and/or past teaching behavior, including examination of assumptions, values and beliefs contributing to that practice. It is triggered by a precipitating event (problem, surprise) and characterized by a decision to seek a solution and change teaching behavior.

CHAPTER II

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Originating from the Latin *reflectere,* to "bend back," reflection is generally recognized as the act of contemplation (Valli, 1997). As it is conceptualized in teaching practice, however, reflection is much more. A number of constructivist premises ground the concept of reflective practice. Teaching is not the blind application of outside knowledge, but a dynamic negotiation among the teacher, the immediate teaching environment, and the wider cultural context in which they exist. Intrinsic teaching knowledge develops through the careful examination of practice in light of teachers' assumptions, beliefs and values. In practical terms, teachers are continually engaged in a kind of problem solving.

Variously associated with inquiry-oriented education, critical thinking and action research in teaching, reflection is generally assumed to be essential in the development of effective teaching practice, and has been the hallmark of teacher education programs for the last several decades (Calderhead & Gates, 1995; Darling-Hammond & Sykes, 1999; Levine & Tarchtman, 1997; Zeichner, 1983).

Dewey

While a number of theoretical frameworks have contributed to current beliefs about reflection, John Dewey's (1933) is considered seminal. He distinguished intelligent action from the routine, unexamined actions of everyday

life. Learning was much more than the simple retention and comprehension of information; rather, it was the deliberate cognitive processes that lead *to* them, processes characterized by ongoing assessment of competing claims, tacit assumptions, and implications for action. Reflective thought was the "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (p. 9). This concept presupposed a dialectic relationship between a learner's actions and his/her assumptions of reality (Ferry & Ross-Gordon, 1998).

Learners are prompted to reflect when they recognize a "state of doubt, hesitation, perplexity [or] mental difficulty" and decide to act in response (Dewey, 1933, p.12). Although he did not prescribe the order, Dewey outlined five steps in the reflective thinking process, beginning with the recognition and identification of a problem. This was followed by a means-end analysis which included speculating on possible solutions (including the collection of additional "data"), examining the implications of those solutions through reasoning and visualization, and verifying the appropriateness of solutions. Essentially, reflection was a process of continuous hypotheses formation and assessment in which hypotheses were examined in order to discover the beliefs and assumptions warranting them, and then assessed as to their appropriateness in the specific context of action. Necessary to the initiation and completion of this means-end analysis were the learner's abilities to consistently construct meaning, to be willing to consider new ways to frame problems and solutions, and to take responsibility for whatever action was finally decided upon.

Education was central to the development of reflective thinking in learners, believed Dewey (1933, 1938). Educators were responsible for guiding learners to engage in thoughtful action, develop habits of mind to address life's challenges, and perceive the world around them in richer, more meaningful, ways. He was critical of the teacher education system of his day because he believed its emphasis on technical training did not prepare educators to engage in deliberate thinking or to teach others to do the same (Dewey, 1964). Besides teaching students to reflect, he believed, teachers themselves must continually reflect upon their own practice.

Dewey's ideas about reflection did not take hold in teacher education efforts until the 1970's. The predominant competency- and performance-based models of teacher development of the time assumed readiness to teach could be measured by the acquisition of prescribed skills (Richardson, 1990). This behaviorist, context-generic approach was criticized by, among others, Lee Shulman (1986) of the National Institute of Teaching. Subsequent research on teaching proposed that teaching knowledge is in continual production, located in the interaction between the practitioner and the teaching situation, rather than within a body of accepted pedagogical knowledge (Shulman & Lanier, 1976). This new focus on the "wisdom of the practitioner" operating in the idiosyncratic situations of the classroom became the locus of inquiry which turned its sights to constructivist theorists about teaching and learning.

> is easy to believe that when we step into the separate domain of thought we will become lost in an infinite regress of thinking about thinking. But actual reflection-in-action, as we have seen, doing and thinking, are complementary. (1983, p. 280)

Reflection-in-action made conscious, at some level, the tacit knowledge of the practitioner so that the problem could be addressed. Because practitioners continuously encounter problematical situations, however, they are always thinking about upcoming events in light of past practice. It is inevitable, then, that they engage in "reflection-on-action," a reconstructive mental review of what has already occurred, in anticipation of future action.

What did this reflection look like? Like Dewey (1933), Schon (1983, 1987) described reflection as a process of testing and experimenting, beginning with a perception of surprise or discomfort. Unlike Dewey, he did not explicitly detail the steps of which it was comprised. He emphasized the use of reflection in uncertain or ill-defined situations, and recognized that an individual's values and assumptions informed the way s/he thought about both the problem and the solution. This differed from the apparently sequential reasoning process proposed by Dewey (1933). While he never articulated the components of the "data collection" phases of reflection, Schon believed that, as a result, the practitioner would make a decision to act, implying "that a change in thinking occurs in that reflection leads to new understanding or a new theory or frame" (Rogers, 2001, p. 45). The value of reflective thinking, believed Schon (1983), was that it enabled practitioners to frame problematic situations in ways that lead to solutions, and to recognize, assess, and respond to widely divergent situations of practice.

Schon

Several decades after Dewey, Schon's (1983,1987) description of the "epistemology of practice" extended the concept of reflection to the thinking of professionals. When teachers, architects and engineers perceived situations of "uncertainty, instability, uniqueness and value conflict," the actions they used to address them operationalized a tacit knowledge about themselves and the situation (1983, p. 48). Differing in discrete ways from Dewey, he believed that professionals were not always conscious of the process they used to solve problems. Instead, practitioner knowledge was intuitive, entailed in the action itself, something he called "knowledge-in-action" (1987, p. 25). When professional action, resulting from a complex but often unconscious thinking process, resulted in the expected, the practitioner did not think about it. "Interacting with a situation brings forth and expands upon a type of tacit knowledge in an individual that is not consciously articulated at the time. Thus it may not be possible for a practitioner to describe the decision-making processes that led to an action" (Richardson, 1990, p. 11).

Because of this, discerning the tacit knowledge of professionals was a challenge, Schon (1983, 1987) contended. Sometimes, however, when practitioners were surprised or troubled by a situation, they engaged in conscious "reflection-in-action," simultaneous thinking and doing in an attempt to solve a problem (Schon, 1987, p. 31). He believed that the "craft" of a profession was this ability to think and act simultaneously:

> If we separate thinking from doing, seeing thought only as preparation for action and action only as an implementation of thought, then it

Van Manen

While Dewey and Schon contributed significantly to the conceptualization of reflective practice, Van Manen (1977), expanding the work of Habermas (1974), proposed the first of what were to become many conceptual frameworks outlining different levels of reflective thought. He took a pragmatic view of what teachers were expected to do. The predominant concern of the educational system, he believed, was "an instrumental preoccupation with *techniques, control,* and with means-end criteria of *efficiency* and effectiveness" (Van Manen, 1977, p. 209). In response, then, teachers often engaged in reflection in order to solve problems in the most efficient manner, with little of the deep analysis of assumptions or beliefs assumed by other theorists. In this case, teachers made choices among solutions available to them, without questioning the meanings of the available set. This technical level of reflection, many believe today, is not only predominant among new teachers, but may represent a first stage in the development of more sophisticated levels of reflective thought (Gore & Zeichner, 1991).

A second set of reflective strategies was used when the educator critically evaluated prescribed practices in relation to their outcomes and the assumptions and beliefs informing them (Van Manen, 1977). The way the practitioner ultimately chose to solve the problem represented tacit acknowledgment of the value of one course of action over another. At the top of this hierarchy was "critical reflection," a process of thought where the practitioner considered the "worth of knowledge and the nature of the social conditions necessary for raising

the question of worthwhileness in the first place" (Van Manen, 1977, p. 227). At this level of reflection, justice, equality and freedom were the measures against which any teaching action was assessed. Essentially, the assumption was that every teaching action reflected particular ideological perspectives (Brookfield, 1995).

Examination of conceptual frameworks raised a number of questions. Was reflection bifurcated from action, or was modified action part of a reflective cycle? (Grant & Zeichner, 1984; Noffke & Brennan, 1988) Was the impetus for reflection always problem-oriented? (Adler, 1991; Calderhead, 1989; Schon, 1987) Could reflection occur less systematically, within a very short period of time? (Farrah, 1988; Schon, 1983) How able was the reflective practitioner to unpack the cultural beliefs that informed his or her assumptions about the situation? (Gore & Zeichner, 1991; Noordhoff & Kleinfeld, 1988; Smyth, 1989).

Competing Conceptualizations

Over the 60 years since its articulation by Dewey, and, more directly, in the 30 years during which it has been popularized in teacher development programs, reflective practice has been so variously conceptualized as to imply little concurrence among educators (Calderhead, 1989; Rogers, 2001). Zeichner (1994) contended:

> It has come to the point now where the whole range of beliefs about teaching, learning, schooling, and the social order have become incorporated into the discourse about reflective practice. Everyone, no matter what his or her ideological orientation, has jumped on the bandwagon at this point, and has committed his or her energies to furthering some version of reflective teaching practice. (p. 9)

Differences abound in answers to central questions: How is reflection defined? What antecedes it? What contextual factors encourage and influence it? What does the reflective process look like? What are the outcomes and implications?

Mezirow (1991) refined earlier theories by conceptualizing three levels of reflection. "Content" reflection was the description of a problem. The emphasis was largely on the technical level ("How do I facilitate discussion?"; "How do I write learning objectives?"; "How can I construct an effective test?") (Kreber & Cranton, 2000). A variety of strategies to solve the problem was classified as "process" reflection. The third level, "premise" reflection, focused on what assumptions, values and beliefs lead to the description of the initial problem. For example, teachers would examine the match between course goals and the particular teaching situation, or the ways in which class work was assumed to develop student learning skills.

LaBoskey's (1995) conceptual framework of reflective thinking was another attempt among many to apply the concept of reflection to programs of teacher education. Because novices bring to programs, she contended, a variety of assumptions and beliefs about teaching, they can be categorized along a continuum. "Common Sense Thinkers" entered programs with little apparent skill or inclination to reflect on teaching. In contrast, "Alert Novices" demonstrated both the cognitive ability to engage in reflection and "conducive beliefs, values, attitudes and emotions" (p. 30). The ultimate goal of a teacher education program was to guide students to the Alert Novice end of the continuum.

According to LaBoskey (1995), teachers were prompted to think reflectively about their teaching by both internal and external impetuses. Once the process was initiated, it involved a number of complex interactions among several factors. "Context" included the location and timing of the precipitating event or problem; as well, it was defined by the structural aids in place (supervising teachers, discussions about teaching) that affected how the problem was defined and thought about. This last consideration was especially important to teacher education programs in justifying choices about curriculum.
The thinking process itself included the definition of a problem, a means-end analysis, and a culminating generalization leading to action on the problem. LaBoskey (1995) concurred with Dewey (1933) in believing that the attitudes of the teacher--open mindedness about possible solutions and willingness to take responsibility for action—were essential determinants of the level of reflection a teacher engaged in. Reflection might focus on practical or theoretical matters. The ultimate purpose of reflection was to produce new understandings about teaching, but, since the reflection was a function of a complex interaction of factors, that result might look very different among practitioners. This recognition of the complexity and variability of the process, "in which both feelings and cognition are closely interrelated and interactive," became a hallmark of reflective thinking that was not apparent in Dewey's (1933) conceptualization (Boud, Keogh & Walker, 1985, p. 11).

Attention to this complexity precipitated a closer look at the influence of ideological beliefs on reflection. Brookfield (1995) contended that "critical

reflection" was not so much a separate process from technical or practical reflection as it was a factor in all reflective teaching. To fully understand their reactions to problems and justifications for solutions, teachers must make explicit tacit paradigmatic assumptions about ways of ordering the world, and beliefs about the conditions fostering learning—not simply look for popular "best practices" in the literature. Critical reflection is concerned with movement "beyond the acquisition of new knowledge and understanding, into questioning [of] existing assumptions, values, and perspectives" (Cranton, 1996, p. 76).

Rogers' (2001) meta-analysis of seven major theoretical approaches to reflection revealed that, despite clear differences and a need for further clarification, significant commonalities exist. The terminology used to describe reflection varied among the approaches, but all defined it as a cognitive process requiring the active engagement of the individual (Boud, Keogh & Walker, 1985; Dewey, 1933; Langer, 1989; Mezirow, 1991; Schon, 1983, Seibert & Daudelin, 1999). Reflection was defined as thinking about action in response to an unusual or troublesome situation, a process requiring the willingness and ability of an individual to recognize and assess the internal and external assumptions, values and beliefs operating in the situation. "A second general step in most models is collecting additional information regarding the problem prior to taking further action," including hypothesizing about potential responses (Rogers, 2001, p. 44). This was followed by a plan to act, and, then, in most models, action informed by the reflective process. Most models delineated techniques to foster reflection, including "reflective practica," coaching, and the use of structured experiences

like seminar discussions and reflective journals. All agreed that contextual factors within the individual, the situation, and the larger environment played an essential role in the nature of the reflective process, and that the outcome of reflection was "the integration of the new understanding into one's experience" (Rogers, 2001, p. 41).

Rogers (2001) concluded that, despite their differences, these theoretical approaches assumed that reflection was characterized as an

> ever-expanding spiral in which challenging situations lead to reflection and ultimately to new interpretations or understanding. These new understandings may then lead to new challenges and additional reflection. Each new experience should lead the individual to broadened and deepened understanding, an enhanced array of choices, and a more sophisticated capacity to choose among those choices and implement them more effectively. (p. 45)

Though they did not specifically examine the thinking of teachers, King and Kitchener (1994) constructed a developmental stage model that described the differences of seven levels of reflective thinking in adolescents and adults. A significant aspect of their work is an examination of the problem that reflectors think about. They contended that the process of reflective judgment would not occur if the individual did not perceive a problem as complex. Some problems, they contended, like world hunger or pollution, "cannot be described with a high degree of completeness or solved with a high degree of certainty" (King & Kitchener, 1994, p. 10). Framing a problem as "ill-structured" stood in contrast to problems that could be solved through technical means.

According to King and Kitchener (1994), advanced levels of education corresponded with advanced levels of reflective thinking, and graduate students

consistently scored at advanced levels. As determined in similar studies, "intense study in a discipline may play in the development of advanced levels of epistemic cognition" (King & Kitchener, 1994, p. 39).

Inquiry Into the Development of Reflective Teachers

Pre-Service Teacher Programs

The focus on reflection as an essential element in pre-service education emerged from a dense historical fabric (Hatton & Smith, 1995; Zeichner, 1992). Traditions that defined teachers as transmitters of accepted knowledge, or as appliers of the best pedagogical research, were overlaid by movements that defined teachers as agents of social change. The eclipsing of behaviorist for cognitive psychology in recent decades gave legitimacy to programs that focused on the effect of thinking on learner behavior, and validated learner- over teacher-centered classrooms. Dissatisfaction with the ability of educators to meet students' needs in the 21st century is a significant impetus for teacher development programs that empower educators to develop as professionals (Austin, 2002a; Boyer, 1991; Gaff, Pruitt-Logan, Wiebl & Associates, 2000; Good & Brophy, 1994; Meacham, 2002).

The historical context is only one factor to consider in the structure of teacher education programs. How can a program provide the environment for novices to construct their own meanings of teaching when reflection is so variously conceptualized? (Zeichner & Liston, 1987) "The challenge to educators," said Rogers (2001), "is to sort through these complex contextual factors and establish conditions conducive to learning and reflection" (p. 51).

Much of the research in teacher education focuses upon different methods used to promote reflective practice, and has resulted in competing beliefs about the best ways to develop reflective teachers. Collaborative teaching groups, teaching journals, structured dialogue, teaching philosophies, class observations, peer evaluation, mentoring, structured analysis of practice—different teacher education programs use different approaches (Boud, Keogh, & Walker, 1998; Darling-Hammon & Sykes, 1999; Pugach & Johnson, 1990; Tann, 1995; Tom, 1985; Zeichner, 1986). A central feature in most teacher education programs, supervision has been investigated relative to its effect on fostering critical reflection (Goethals & Howard, 2000; Pelletier, 2000; Sullivan & Glanz, 2000).

Given the multiplicity of strategies to promote reflection in teacher education, another body of research attempted to assess the level and kind of reflection that results. Valli's (1997) review of teacher education programs revealed that categorically different kinds of behavior were identified as evidence of reflection, raising questions about the conceptual integrity of curricula designed to promote it. Boud and Walker (1998) discovered that some programs promoted "reflection by recipe" and accepted reflection without learning. Holt-Reynolds (2000) said that little reflection actually occurred in pre-service teachers, and questioned whether the constructivist pedagogical assumptions entailed in concepts of reflection were more than novice teachers could comprehend. Calderhead (1989) argued that teacher education programs needed a deeper understanding of what the process consisted of in order to develop appropriate curricula.

Other researchers examined programs to determine their conceptual grounding. Valli (1997) concluded that five different conceptions of reflection characterized the basis for most teacher education programs. Some were modeled after Schon (1987), and others after the critical reflection described by Van Manen (1997). In some cases, programs were structured around the development of technical reflection, the application of teaching research. Other programs promoted "deliberate" reflection, which "emphasizes decision-making based on a variety of sources: research, experience, the advice of other teachers, personal beliefs and values," and expanded the definition of teaching practice to include relationships with students and subject matter (Van Manen, 1997, p. 77). In still other programs, teachers were encouraged to analyze the role of teaching in their personal development. Valli (1997) contended that exclusive emphasis on one theoretical approach over another was probably not beneficial in developing reflective practitioners; rather, "various approaches should be used in combination with one another" (p. 81).

The call for additional research is vigorous. Houston and Clift (1990) describe many areas in need of further exploration, including the role of language in mediating understandings about teaching, the connections between reflection and teaching, what reflection looks like, factors that constrain or encourage reflective practice, and the effect of community on the development of reflective habits.

> With schools, colleges, and departments of education looking for models of teacher preparation to guide their programs, . . . there is continued risk that "reflection" will become more and more of a slogan and carry less and less meaning. . . . Continued inquiry and negotiation about the meaning

> purpose of reflection must remain on the agenda of teacher educators. (Valli, 1993, p. 225)

Research into the development of reflective habits in teacher education has relied most heavily on single-data sources (Dinkelman, 2000). The structural factors of programs promoting reflection have been examined through questionnaires, descriptive analysis and formative evaluation. Inquiry into the reflective process has relied on self-reporting of pre-service teachers through interviews, questionnaires, pre- and post-tests, self-evaluation reports, and journals. Conclusions about the nature and implication of reflective practice on teaching has not emerged from the analysis of multiple data sources, including participant observation of teaching, seminar discussions, or interactions among program participants. The complex interactions between practitioner and practice have, for the most part, not been described.

Higher Education

The systematic use of reflection in the teaching development of college faculty has not been evidenced in higher education, which has been slow to revise its traditional view of teaching (Lovett, 1993). For over 40 years, a research model has predominated which socializes doctoral students to value scholarship over pedagogy (Gaff, 2002; Gaff & Lambert, 1996). Traditionally, graduate education has operated on an apprenticeship model that assumed "a graduate student/apprentice will be socialized into the profession by a mentor" (Bieber & Worley, 2006, p.1010), and a number of scholars have studied how this influenced the quality of the doctoral experience (Gerholm, 1990; Hartnett, 1976; Lovitts, 2001; Nyquist et al., 1999; Weiss, 1981). However, "there has

been little concerted effort to investigate the use of reflective strategies in teaching, and the use of reflection from the perspective of the teacher has not been explored" (Scanlan, Care, & Udod, 2002). Universities have not looked to their schools of education as resources for the development of college faculty; often they are viewed as scholarship deficient (Baiocco & DeWaters, 1998). In surveys of Ph. D. alumni, respondents described their doctoral programs as insufficient preparation for college teaching (Nerad & Cerney 1999; Smallwood, 2001; Smith & Pedersen-Gallegos, 2001).

Beginning with the 1990 report, *Scholarship Reconsidered*, however, a new discourse about college teaching took hold (Boyer, 1990). Boyer called for the reframing of traditional notions of research to include the scholarship of teaching, "to claim it as a respected aspect of academic work, worthy of reward" (Hutchings, 1995, p. 6): "What's needed . . . is a culture in which . . . teaching and learning are the subject of sustained, public attention and inquiry" (p. 4). Since then, a considerable body of research has analyzed the implications of this notion (Cunsolo, Elrick, Middleton, & Roy, 1996; Diamond & Adam, 1997; Edgerton, Hutchings, & Quinlan, 1991; Kreber & Cranton, 1997, 2000; Menges & Weimer, 1996; Morehead & Shedd, 1996; Paulsen & Feldman, 1995; Richlin, 1993; Taylor, 1993; Weimer, 1992).

One interpretation of the scholarship of teaching has emerged which parallels conceptions of reflective practice as commonly described in teacher education programs (Kreber & Cranton, 2000; Menges & Weimer, 1996). From this perspective, "a wisdom of practice is developed through a combination of

reflection on theory and research and experience-based knowledge on teaching" (Kreber & Cranton, 2000, p. 478). Scholarship of teaching so defined means that teachers simultaneously and continually demonstrate their teaching knowledge and learn how to teach. Kreber & Cranton (2000) propose that the scholarship of teaching be broadened to include the concept of reflective practice, "both ongoing learning about teaching and the demonstration of teaching knowledge" (p. 478). Cross & Steadman (1996) developed a classroom research model to help faculty investigate their teaching practice by assessing their students' learning. Using peer review of teaching, developing teaching philosophies, interviewing students, and investigating teaching in formal ways all assume that teaching practice should be informed by ongoing reflection (Coppola, 2000; Glassick, Huber, & Maeroff, 1997; Hutchings, 1993; Shulman, 1999).

The paradigm shift towards an emphasis on learning has focused new attention on the ways college teachers are developed. The Preparing Future Faculty initiative, launched in 1993, is a national effort between the Council of Graduate Schools and the Association of American Colleges and Universities that identifies graduate education as an essential locus of change (Bieber & Worley, 2006; Gaff, 2002).The program encourages partnerships among colleges and universities to help prospective faculty prepare for components of their future roles. "The primary audience we are addressing are those who think that the graduate education of future academics should be changed to include more emphasis on preparation for teaching, for service, and for understanding faculty responsibilities in diverse institutions" (Gaff, Pruitt-Logan, Weibl, 2000, p.

xi). Preparing Future Faculty programs have been the subject of a growing body of research. Much of the scholarship focuses on the way graduate students themselves assess the program's impact on their professional development (Bashara, 2002; DeNeef, 2002; Gaff, Pruitt-Logan, Weibl, 2000; Golde, 2001).

Until the initiation of the Preparing Future Faculty Program, very little research had been done on the teacher education components of graduate education (Golde & Dore, 2004). Few scholars tracked the progress of graduate students, Gaff (2002) concluded, because of the decentralized nature of graduate programs: "it resembles a 'cottage industry,' in which each faculty member establishes his/her own rules, little collective learning occurs, minimal centralized standards or guidelines are available" (p. 8). The graduate experience has been analyzed through a systems theory or institutional isomorphism approach (Gumport, 1991; Hackett, 1990). A small body of research has described the experiences of graduate students as they struggle to find their place in the system (Anderson, 1996; Austin, 2002; Golde, 1998; Golde & Dore, 2001; Lovitts 2001; Nyquist, Manning, & Wulff, 1999). Because they determined that this investigation of the actual experiences of doctoral students was thin, Golde and Dore (2001) conducted a survey of over two dozen universities to determine both the successes and challenges faced by today's doctoral programs. Their findings reinforced the need for more comprehensive teacher education in doctoral programs. These results were corroborated by a subsequent survey conducted by the National Association of Graduate and Professional Associations in 2001. Golde (2001) concluded that doctoral

students who were part of a Preparing Future Faculty program felt better prepared than those who did not to teach lecture courses, develop a teaching philosophy, and facilitate class discussion—a finding corroborated by DeNeef (2002). Nevertheless, faculty administrators in several institutions said that their doctoral students were not fully prepared for academic careers because of a lack of pedagogical training. Despite these investigations, Bieber and Worley (2006) contend that "little attention has been paid to how the future faculty, while still in graduate school, perceive their future careers as faculty" (p. 1011).

Within the graduate program, institutional efforts to train graduate student teaching assistants have been influenced by the new interest on college teaching. Among the guiding principles of the Preparing Future Faculty program is the creation of a graduate experience that includes increasingly varied and independent teaching assignments, ready resources (workshops, seminars) to encourage continual professional development, and close mentoring relationships with experienced faculty who can help graduate students develop their teaching (Gaff, Pruitt-Logan, & Weibl, 2000). Although graduate teaching assistantship programs vary in depth, breadth, and the assumptions grounding their organization, many scholars have investigated their effect upon the classroom practice of graduate teachers (Benassi & Fernald, 1993; Benassi, & Fuld, 2004; Carroll, 1980; Prieto & Myers, 1999). A number of investigations have described the nature and effect of teaching practica on the development of graduate teachers (Latterell, 1996; Marincovich, 1998). Investigations of graduate assistantship programs have resulted in stage theories that describe

the development of new college teachers and graduate students (Chism, 1993; Nyquist, Abbott, Wullf, & Sprague, 1991; Sprague & Nyquist, 1991).

Other investigations detail the program components in place to promote reflection, including teaching journals, teaching portfolios, teaching observation and feedback, seminars, practica and mentors (Allen, 1991; Drake & McBride, 2000; Fernald, 1995)--although this work does not rely on deep description to reveal the complex interrelationships among teachers and their environments that affect the nature of reflection. Scanlan and Chernomas (1997) said that the extant research has not resulted in understandings that guide educators on the use of reflection. Burns and Bulman (2000) contended, "While there's an abundance of literature on the subject of critical reflection, the literature is largely theoretical, speculative or frankly anecdotal" (p. 20).

Psychology

Most doctoral students work as teaching assistants at some time during their program (Henderson & Woods, 1997; Hoffer, et al., 2003). Nevertheless, the training that teaching assistants in psychology receive is either absent or considered inadequate preparation for their teaching duties (Buskist, Tears, Davis, & Rogrigue, 2002; Meyers, 2001; Prieto & Meyers, 2001; Prieto, 2004). Although over half of psychology teaching assistants in one study indicated they planned a faculty career, one-third had received no training at all (Meyers & Prieto, 2000).

While there has been an increased effort in recent years to provide teaching assistants in psychology with training, current programs vary widely in

consistency and quality (Prieto, 2004). In most cases, the training is not mandatory (Meyers & Prieto, 2000). In a nationwide survey of psychology teaching assistant programs, Prieto (2000) found that

> typical training methods included orientation programs, workshops, a course on teaching, observations of teaching, and microteaching exercises. Typical topics included developing and presenting syllabi, labs, and lectures; evaluating and promoting student learning; managing problematic student behavior; ethics; and awareness of campus resources. . . . Training methods use an apprenticeship or modeling approach (e.g., TAs watch faculty and have faculty watch or supervise them); TAs actively practice and receive feedback on actual teaching skills (e.g., microteaching); and students learn about teaching (e.g., course work, orientations, workshops, seminars). (Buskist, Beins, & Hevern, 2004, p. 4).

Given this wide spectrum, Buskist, Beins, & Hevern (2004) indicate a need for "better understanding [of] effective pedagogical processes in training psychology TAs . . . and a more global understanding of the longer-term developmental processes that govern TAs' skill and identity acquisition as psychology educators" (p. 6).

The relative lack of agreement about the best ways to educate teaching assistants for their teaching roles in psychology is contrasted by the belief that "the fundamental goal of education in psychology . . . is to teach students to think as scientists about behavior," implying that psychology faculty must be knowledgeable about guiding students to think (Brewer, 1993, p. 169).

My Research

My research on the use of reflective thinking by novice teachers in a doctoral program in psychology is situated in this broad context. Though there

has been considerable inquiry into program practice that, theoretically, encourages reflection about teaching, there is little research into what reflection looks like in the daily lives of new teachers.

CHAPTER III

METHODS

This study employs ethnographic methods in order to understand the processes of reflection on teaching behavior of third-year doctoral students in a teaching practicum. This chapter describes and assesses the methods used to investigate the following questions:

- What is reflected upon? When, why, how, and by whom?
- What cognitive processes are used to define and analyze points of reflection? When, why, how, and by whom?
- What conclusions or solutions are reached by participants as a result of these processes?
- What attitudes, beliefs, assumptions and emotions factored into the reflective behavior of participants?

Assumptions of the Study

This study makes central ethnographic assumptions. The overarching premise is that the researcher, by participating in the field, is able, over time, to discern the patterns of meaning operating within a group. I assume the postmodernist stance that no single reality exists that can be discovered by the ethnographer. Rather, the "reality" is an ongoing construction comprised of my mental representations of and those of participants (Lincoln & Denzin, 1994),

realizing that this belief may be criticized as ontological. That is, it seems not to deny that "truth" exists, but rather simply to redefine it.

Other assumptions include a belief that the explicit verbalization of participants, whether in naturally occurring situations or interviews, is always partial and often ambiguous. This is so, I believe, because meaning is in continual formation, and no individual is fully aware of what s/he knows or thinks. Therefore, I assume that this study cannot represent the definitive truth about what occurred in the setting, but rather stands as an honest and effortful interpretation of what occurred. The trustworthiness of my work represents "a mode of epistemic evaluation, and the outcome of that evaluation. It is what is right to believe, based upon our epistemic values" (Stewart, 1998, p. 14; Ellis,1990).

Setting and Participants

The setting for this study is the Ph.D. program in psychology at the University of New Hampshire (UNH) in Durham, New Hampshire. UNH is a public, co-educational, residential, land grant institution, considered "research-extensive" (Benassi & Fuld, 2004). Over 2400 students are enrolled in graduate programs. Doctoral degrees are awarded in over 20 specialty areas. The psychology department at UNH consists of almost 30 faculty members, at least one-third of whom have been honored with teaching or research awards. Areas of research study include Brain, Behavior, and Cognition; Developmental Psychology; History of Psychology; and Social Psychology/Personality. In the past few years, 75% of those graduating with a doctorate in psychology have

been hired as faculty members in colleges and universities throughout the country (Benassi & Fuld, 2004).

The study focuses on the Preparing Future Faculty initiative of the doctoral program in psychology, a component devoted to the pedagogical development of doctoral students. Recognized by the American Psychological Association for innovation and creativity in 2003, a major goal of the doctoral program is to prepare graduate students for faculty careers, to make them marketable, not just as researchers, but as college teachers (Benassi & Fuld, 2004). All doctoral students spend a year learning about and practicing college teaching. Many doctoral students in the program also earn a master's degree or Cognate in College Teaching offered through the university's Preparing Future Faculty Program. Dr. Victor Benassi, one of the coordinators of the psychology program, says the aim is to guide students in the development and application of personal teaching goals and objectives (V. A. Benassi, personal communication, May 13, 2006). Central, says Benassi, is the belief that the act of teaching, and the subsequent reflection of that act, will not only prepare students for teaching careers but will fundamentally change the ways they look at their teaching identities.

In the first year of graduate study, students enroll in a pro-seminar which introduces them the goals of the doctoral program and broadens their understanding of the field of psychology (Benassi & Fuld, 2004). During the first two years, students work with faculty members to develop master's level research and serve as teaching assistants. By the end of their second year, they

complete the requirements for a master's degree. Completion of comprehensive examinations and promotion to doctoral candidacy occurs by the middle of the third year. In their third year, graduate students teach both semesters. At least one course is in their research specialty area. By the end of their fifth year, most students have completed their dissertation.

The focus on college teaching comes in the third year of the program. Students enroll in Psych 991 and 992: Practicum and Seminar in the Teaching of Psychology in the fall (Benassi & Fuld, 2004). The summer before, they work with the seminar instructor to develop a number of teaching modules. These unit lessons include lecture materials, class activities and tests which they will use in the fall semester teaching one 30-student section of Introduction to Psychology, an undergraduate course meeting a General Education requirement. They also develop their syllabi and choose textbooks. In the spring semester of their third year, participants teach another section of the course, but the enrollment is increased to 50 students. In both semesters, participants communicate regularly with supervising faculty and attend a once-weekly seminar. Supervising faculty serve as mentors, counseling about classroom issues, providing resources, teaching the seminars, and assessing teaching performance. As well, some of the doctoral students' teaching is observed by the supervising faculty, and at least two classes are videotaped for review.

My study focuses on the four students who participated in the practicum and seminar the 2005-6 academic year. The central setting for this study was the teaching seminar. During this three-hour weekly class, key participants and the

seminar instructor discussed assigned readings about teaching and learning, as well as their own teaching experiences. The predominant locus of this study is the "check-in" session that opened most seminar days, where key participants gave status reports about their teaching, shared concerns, or disclosed "teaching dilemmas." Another significant locus was the classroom behavior I observed in the students' spring semester. A number of interview and written materials related to the seminar/practicum experience were examined.

Key participants for this study were two male and two female doctoral students enrolled in PSYC 991 and 992: Practicum and Seminar in the Teaching of Psychology. Other participants included the practicum instructors, one male and one female, for the Fall 2005 and Spring 2006 semesters, who also served as faculty supervisors of key participants' teaching.

Researcher's Membership Role

I adopted the role of participant observer in all of the observed teaching seminars and practicum instructor-key participant assessment sessions. In the teaching seminars, I participated in the discussions, completed course readings and presented assigned materials; therefore, my role may be classified as that of an Active Member (Adler & Adler, 1987). Present, but not often a conversant in assessment meetings between individual participants and practicum instructors, I assumed the role of Peripheral Member. Although I often took class notes and participated in activities, my role when observing key informants teach was as a Peripheral Member, as I usually did no more than observe.

I established comfortable social relationships with key informants. They spoke with me openly during seminars and interviews and shared personal matters in casual conversation before and after seminar classes. They responded to all my email inquiries, supplied me with their course materials, and allowed me to observe their teaching weekly during the spring semester. In the spring, they invited me to observe the assessment meetings with the seminar instructor who reviewed video recordings of their teaching or talked about his observation of their teaching. Within the seminar, they responded to my questions, asked me for my opinion, and treated me as though I was a member of the group. Participants frequently inquired about how my research "was going" and what I had observed about their and their students' behavior when I sat in on classes. Additionally, they asked me to video record some of their classes. An indication of the comfort that participants felt about my presence came from one participant's remarks about my role in the seminar:

> I can only tell you how beneficial it was to have somebody else in class. . . . I really can't scratch the surface of what you gave us by just trying to be one of us. As much as we knew you were doing this to complete a goal, I looked forward to having you in there. I looked forward to the exchange. It was never a chore for me.

The practicum instructors in the fall and spring semesters supplied me with all course materials and included me in assignments and seminar discussions, factoring in my schedule when class dates were rearranged. They invited my questions about the seminar and practicum and their roles within them, and willingly participated in semi-structured interviews. After receiving permission from key informants, both practicum instructors answered my inquiries about

their behaviors and invited me to sit in on their assessment sessions with key informants. They often spoke with me about my opinions regarding teaching behavior and asked for my advice. I would describe the relationship I had with both practicum instructors as collegial.

Data Collection

My fieldwork was representative of the critical elements of qualitative research as described by Wolcott (1999): experiencing, enquiring, and examining. I *experienced* naturally occurring events firsthand as a participant observer, and, on occasion, as a passive observer. I *enquired* when I shifted my role from observer to active investigator, asking questions of participants in semi-structured interviews, in seminars, and in verbal and email conversations. I *examined* the written records produced by participants and video recordings of their teaching. Observation was my key method of investigation.

Fieldwork began in May of 2005, when I observed two meetings with the fall practicum instructor and participants. The majority of observation occurred between August 2005 and May 2006. In the fall 2005 and spring 2006 semesters, I assumed the role of participant observer by attending the three-hour weekly teaching seminar. In the spring semester, I passively observed the key participants' classes once a week. During the course of the study, I conducted four semi-structured interviews of each key participant and one semi-structured interview of each practicum instructors. I observed assessment meetings between three of the key informants and the practicum instructor in the spring semester. I had frequent informal and email conversations with key participants

and practicum instructors. Additionally, I collected video recordings of several classes, for the fall and spring semester, taught by key participants.

Collected artifacts included key informant course materials (syllabi, quizzes, tests, answers, Power Point presentations, assignments, class materials and readings), as well as their student evaluations. I collected teaching journals, teaching philosophies and final teaching portfolios, and course materials from the fall and spring teaching seminars, including syllabi, assignments and readings.

Throughout the study, I wrote field notes and memos, and recorded most field sessions with a digital voice recorder. I personally transcribed these audiotapes verbatim, with some exceptions. In those cases, I summarized the ideas or events. Grammatical errors and verbal idiosyncrasies were included in transcriptions, but, unless appropriate to the analysis, were omitted from the narratives in this document.

Data Analysis Procedures

My general focus at the beginning of the study was the developing teaching identities of the key participants. Because I was unsure what that might look like, I, at first, regarded most events as relevant.

Data analysis occurred throughout the study, representing a recursive and revisionist rather than linear and additive approach—appropriate in ethnographic inquiry. However, analysis occurred, generally, at three levels. During the initial data collection period, field notes, memos and transcribed materials were analyzed by asking questions about what was going on in the data. This allowed me to delineate between what I was observing and the causal factors of those

behaviors (Emerson, Fretz, & Shaw, 1995). Rereading and annotating materials at this level constituted a first level of analysis. I attempted to discover events and behaviors that recurred or seemed significant, so that I might be more attuned to them in subsequent site visits. Initially, I used a small set of very inclusive ethnographic indices to code units of observation (Becker & Greer, 1960). These included "make a change" and "student feedback" and "next semester," what Seale (1999) might call "low-inference" descriptors representing "verbatim accounts of what people say, for example, rather than the researchers' reconstructions of the general sense of what the person said, which . . . allow researchers' personal perspectives to influence the reporting" (p. 148). This stage of exploratory open-ended observation allowed me to build relationships with participants, begin to gain an intuitive sense of the workings of the group, and more fully experience field happenings.

A precipitating event in the fall semester, combined with the protocol of the seminar sessions, tagged reflection about teaching practice as a potential domain for my investigation, a focus that I intentionally included in subsequent semi-structured interviews of participants. About midway in the fall semester, I began a second level of analysis, looking for patterns of behavior relative to reflection about teaching. During this time, I focused on connective patterns among the types of teaching dilemmas key participants reported, the vocabulary they used to report them, and the ways the seminar group dealt with the issues. I also asked participants what changes they were making or intended to make in their teaching, and what kind of feedback (student, self, practicum instructor) they

were aware of. This was framed, generally, by the structure of human interaction as proposed by Lofland and Lofland (1995), which focuses on acts, actors, activities and settings. For example, I noted the way in which practicum instructors guided the seminar discussion about teaching issues that they, or the key participants, brought forward for discussion.

Concentrated analysis of data occurred only after collection was complete. This represented a third level of analysis at the function level--the concept of teacher reflection operating in participant behavior. I refined earlier open coding by naming recurrent ideas and patterns of action as they applied to reflective behavior about teaching practice, using a series of questions I created from relevant elements of LaBoskey's (1993) conceptual framework for reflection in preservice teacher education (Appendix A). Table1 provides a list of the question stems which I developed relative to teaching problems identified by key participants.

Table 1: Questions about the nature of reflective thinking.

Origin	Context	Content	Process	Factors
Private 1. External or internal? Public 1. External or internal?	1. Location? 2. Timing?	1. Practical / technical? 2. Theoretical? 3. Practical / Theoretical?	1. How defined? a. Private b. Public 2. Reaction? 3. Means/end analysis? 4. Solution? 5. Subsequent action?	1. About self, teaching, learning, students: a. Attitudes b. Beliefs c. Assumptions d. Emotions

Although it is within the bounds of ethnographic methodology, the use of an existing interpretive framework may compromise the integrity of the inquiry, because it may disincline the researcher to attend to events outside of the parameters of that framework (Bryman, 1988; Wolcott, 1990). On the other hand, ethnography assumes a dialectic relationship between what the researcher observes and the meaning s/he makes of it, so that frameworks of some kind are always at play (Wolcott, 2005). My consideration of LaBoskey's (1995) conceptual framework on reflection was strategic. First, I adapted the framework only *after* the unit and pattern levels of analysis were well underway. I had independently identified the domain of reflective behavior; articulated the focal concepts of origin, context, content, process and other factors; formulated questions about each; and considered the chronological relationships among them. Third, by adapting rather than adopting LaBoskey (1995), I created an inquiry-based framework comprised of questions about what was going on in the site rather than matching events to a prescription about how events *should have* occurred. To limit the effect of too readily dismissing some events as unrelated to my framework, I made an effort to identify discrepant cases and continued to test them in provisional hypotheses.

Quality of the Research

Conventional approaches to validity, reliability and generalizability have been met with some resistance by many qualitative researchers, some of whom question the legitimacy of using positivist criteria for naturalistic inquiry (Agar, 1986; Creswell, 1998; Wolcott, 1990). After interviews with 70 field researchers,

Jackson (1990) concluded that there is a "lack of standard methodology" in ethnographic procedures (p. 26), implying that resulting studies would have a low measure of reliability (Campion, 1993; Cicchetti, 1991). Agar (1986) and Wolcott (1990) claim that positivist measures of quality are altogether unsuitable. The ethnographic principle of using the researcher as the primary research instrument, as well as the purpose and conditions of the research, many believe, require different perspectives from which to judge research quality (Guba, 1981; Schensul, Schensul, & LeCompte, 1999; Spindler and Spindler, 1987; Stewart, 1998).

I take a middle ground on this issue and adopt the trustworthiness criteria outlined by Stewart (1998), in which validity is reframed as veracity, reliability as objectivity, and generalizability as perspicacity.

Veracity (Validity)

Validity centers on the credibility of the research, on the dependability of observations and instruments. It assesses the "degree to which results obtained by researchers make sense to and are shared by the people studied and can be generalized to other populations" (Goetz & LeCompte, 1984).

While many agree that validity is a "major strength of ethnographic research" (Schensul, Schensul, & LeCompte, 1999, p. 276), Wolcott (1994) cautions that the criterion is inappropriately infused with measurement. Because measurement is not a factor in ethnography, Lofland (1995) and Wolcott (1994) believe the more appropriate question is whether the researcher really observed what his or her study claims. Adoption of the word "veracity"

distinguishes this question from those concerned with measurement (Stewart, 1998).

In this study, veracity may be tested by examining the length and nature of the field experience. Was the researcher, through prolonged and consistent field visits, able to build relationships with the participants in order to access the assumptions, protocols, beliefs and vocabulary that constitute the culture? (Stewart, 1998). "Working with people day in and day out, for long periods of time, is what gives ethnographic research its validity and vitality" (Fetterman, 1986, p. 46).

The duration of this study—consistent and frequent site visits over two semesters, as well as frequent interviews and email conversations—allowed me to form relationships with participants and understand their behavior, language and thinking patterns. For this reason, my findings meet the criterion of veracity.

Veracity is also an assessment of the rigor used by the researcher to seek out, accumulate and analyze a variety of sources of information (Agar, 1996). Continuous reflection on the large volume of transcribed and written materials allowed me to formulate, verify and disclaim hypotheses about what was going on in site visits; that is, I engaged in ongoing reflection about the tension between my personal understandings (etic) and the meanings of my informants (emic). I believe that I depicted, as accurately as I could, the goings on in the field. For this reason, my findings meet the criterion of veracity.

Objectivity (Reliability)

Traditional questions of reliability are not appropriate in ethnographic research because they assume a lack of bias in data collection and analysis in order to facilitate replication (Stewart, 1998). The intent is not to duplicate results across groups, as ethnography is highly situational and the participants' understandings and relationships change over time (Ottenberg, 1990).

However, the question of objectivity is developed in ethnographic research through the continual interchange between participants and observer. Ethnographers attempt to move beyond (or at least account for) personal perspectives, and to represent the culture of others (Stewart, 1998). "They act and speak with others. Their inquiry is at root an effort at intersubjective, often intercultural, communication. In this fundamental sense it profoundly aspires to objectivity, in the sense of intersubjectivity" (p. 15).

This study attains objectivity in that I make apparent, not only the experiences that lead me to the research, but my assumptions and analysis process throughout. The narratives in the following chapters clearly identify participants, their status and roles, and the relationships they have with one another. I disclose when and where observations occurred, and provide operationalized definitions for all concepts used in description and analysis. By delineating my assumptions and biases, and by ongoing interactions with key participants, I have attempted to achieve a level of intersubjectivity that "profoundly aspires to objectivity" (Stewart, 1998, p. 15; Fabian, 1991).

Perspicacity (Generalizability)

The criterion of generalizability, clearly inappropriate in ethnography, tests whether research findings are applicable to different populations. However, the criterion of generalizability "can be refocused on the extent to which ethnographers can develop a construct or theory, about structures, processes, or relationships, that is specified sufficiently so as to be applied beyond the site of the research" (Stewart, 1998, p. 16). Stewart (1998) reframes the question of generlizability as: "Is this study revelatory? . . . Does this research generate *insights that are also applicable* to other times, other places, in the human experience? . . . How fundamentally does this study explain?" (p. 16).

As detailed above, my data analysis occurred throughout the study, and I utilized a variety of analysis techniques to contextualize and re-contextualize the data. I chose, initially, to investigate the emerging reflective practices of novice teachers because I was interested in the development of teaching identity at the college level. As detailed in Chapter IX, my study has implications for further research and application in this area.

For these reasons, the findings of this study meet the criterion of perspicacity.

Limitations of the Study

My inability to spend more time in the field is a limitation of this study. I was not able to observe key participants teach in the fall semester. This may have been revealing, as it represented the first time they managed their own classroom. I was also unable to observe them in their research duties, or when

they talked together in their office. These experiences may have provided me with understandings about other related facets of key participants' perspectives. Teaching journals were occasionally unavailable; in one case, a fourth face-to-face interview was not possible; in one case, a teaching portfolio was not available.

The second area of limitation is tied to my identity. Although the majority of my teaching obligations were at a different campus, I had strong connections to the Durham campus and functioned in several capacities there. I was also an experienced teacher, and someone older than the key participants by 30 years or more. All of these elements may have contributed to key participants regarding me, not as an unbiased inquirer of their lives, but as a master teacher. In this regard, they may have been less than forthcoming about their teaching experiences, or orchestrated what they revealed to me because they anticipated some reaction on my part.

A third limitation is the self I bring to the study. As a composition teacher, I practice a pedagogy built on assumptions about the ultimate purposes of learning which do not correspond, necessarily, with a pedagogy which uses lectures and tests. Over my years of classroom experience, I have developed a wide repertoire of teaching actions, and adapt to many teaching situations without having to ponder my response. At the same time, I am highly reflective of everything that goes on in my classroom, and may be surprised when novice teachers are not. Because I view every teaching act as an experiment, I may not be as sensitive to the feelings novice teachers have about teaching.

Anonymity

In this study, the names of all key participants, including the four cohort members and two supervising faculty, are represented by pseudonyms.

CHAPTER IV

THE *TERROIRE*

The key informants of this study operated within a number of dialogic systems of meaning, including, although not limited to, their personal histories and the traditions of graduate education. Any attempt to stipulate the elements of the larger context within which they lived their experiences is, necessarily, incomplete. Nevertheless, some understanding of the history, structure and personnel of their graduate program, and the assumptions and beliefs operating within it, is essential in order to situate the meanings of reflective practice proposed in this study.

The UNH Department of Psychology Preparing Future Faculty Initiative

"The UNH Department of Psychology is committed to recruiting, admitting, and enrolling students with strong academic records who seek to develop a career as a faculty member within a college and university setting" (UNH, 2002, p. 12). The mission to include teaching preparation as an integral part of the psychology doctoral program has distinguished the effort since its inception in 1965. Previously funded through grants from the American Psychological Association and the Fund for the Improvement of Postsecondary Education, the program is currently supported through permanent university funds. In 2004, the program was recognized by the American Psychological Association for incorporating graduate coursework with mentored teaching experience.

Early in the program's history, William F. McKeachie, author of *Teaching Tips: Strategies, Research, and Theory for College and University Teachers,* was hired as a consultant to assist with the design of the practicum/seminar curriculum (V. A. Benassi, personal communication, May 13, 2006). "The idea was to prepare graduate students to enter the professoriate, and, as such, they would be trained, not only as scholars, but also as teachers" (K. Fuld, personal communication, April 3, 2006).

Dr. Victor Benassi holds joint appointments as a professor of psychology and a Professor of College Teaching in UNH's graduate school. Since 1982, he has taught the practicum/seminar of the psychology program. According to psychology department chair Dr. Kenneth Fuld, Benassi's charge was to "bring in more formal academic understanding of what we know about teaching and learning" (personal communication April 3, 2006). The psychology department was a likely incubator for a program that applied principles of learning to the development of college teachers, he says. "It's the way we think as psychologists."

Over its history, the psychology program has formed partnerships with the university's Preparing Future Faculty Program (PFF), the Center for Teaching Excellence, and the UNH Academic Program in College Teaching (Wimer, 2006). Available to all doctoral students and faculty, the university's PFF program offers a cognate in college teaching, a Master of Science (MST) in College Teaching, and an on-line graduate certificate in college teaching. Most psychology doctoral

students complete either the cognate or MST in College Teaching. The psychology program is representative of the national effort, instituted by the Association of American Colleges and Universities and the Council of Graduate Schools, to provide prospective college faculty with the resources to develop a full range of skills to meet their future responsibilities (research, scholarship, teaching).

Students who apply for the Ph.D. in psychology at UNH, according to Benassi, have a career interest in becoming "academic psychologist[s] where teaching is going to be a significant part of their job" (personal communication, May 13, 2006). An important justification for the psychology program is the production of graduates with a readiness to teach, he says. Not only are they competitive in the marketplace, but they will have learned "a lot of psychology that is applicable to teaching and learning." They will have experienced the application of cognition and social psychology in the classroom, and utilized psychometrics and measurement. As well, he believes, graduates will have learned about themselves, their communication abilities, their individual strengths, their assumptions about students. All of this, he feels, will enhance their new roles as college faculty.

First-year students in the program take coursework and participate in a proseminar which gives them practice in presenting research in a public forum. They also serve as research and teaching assistants. Second-year students continue teaching and researching, and, in addition to their doctoral coursework, enroll in the Summer Institute on College Teaching offered by the university. In

the fourth and fifth years, students continue teaching, often in their specialty areas, pursue research, and complete a specialty exam in preparation for the doctoral dissertation. Throughout the program, students engage in specialty area research and are commonly involved in the department's service activities.

Practicum and Seminar

Third-year students enroll in the practicum/seminar for the fall and spring semesters. Four faculty in the psychology department rotate as teachers of this course. The course

> provides third-year doctoral students with an academic foundation for teaching psychology. . . . The Practicum and Seminar includes coverage of a broad range of topics concerning teaching and learning, with special emphasis on the teaching of psychology. In addition, students receive group and individual supervision of their teaching. (UNH, 2002, p. 4)

In the fall, the students teach one section of Psychology 401: Introductory Psychology, capped at 30 students; in the spring they teach a 50-student section of the same course. Prior to teaching, they complete an exam designed to test background on the general knowledge of psychology necessary to teach an introductory course. As in the other years of the program, students engage in research in a specialty area.

While faculty who teach in the program develop their own syllabi, an operating principle, according to Benassi, is that learning occurs in many ways (personal communication, May 13, 1996):

> There's no one approach, no one perspective in teaching that's going to facilitate individual student learning without taking into account students' cognitive development. So they're going to see the interaction between teaching as a set of hands-on approaches and the organism that they're trying to affect. . . . That's going to help them understand the importance of variability in their classrooms.

> We're really teaching them a *way* of approaching things, a way of knowing and understanding phenomena that you then have to *apply*, based on the context, the situation, the people you're dealing with.

The seminar, says Benassi, encourages graduate students to think about teaching and learning "in a more systematic way" (personal communication, May 13, 2006). By presenting their teaching issues in the seminar, they can discover new ways to approach them. The "active processing" that goes on in discussions and the support they receive from supervising faculty are essential, he believes, for the development of the confidence to teach in the first place, and to subsequently experiment with new practices. As essential, he says, is the development of continuous reflection habits.

Introductory Psychology is typically divided into discrete units of study, including most of the following: psychological research, neuroscience, sensation, behavior, learning, memory, social psychology, theories of personality, development, abnormal psychology, thinking, language, intelligence. For each unit (typically, one week of class material), graduate students create, submit for review by supervising faculty, and revise (if necessary) a teaching module (Appendix B). The summer preceding their fall teaching, graduate students meet with the supervising faculty (the instructor of the fall practicum/seminar) to familiarize themselves with the craft of module construction and to select a text for the upcoming semester. They usually submit at least three modules for the faculty supervisor's review before teaching: the first module to be taught, the module that represents their area of specialty, and the module that represents the topic they feel least confident about.

Each consists of seven components (Benassi, Jordan, & Harrison, 1994). First is a statement of major teaching objectives for each day of the unit, described as "operationalized statements that describe the student behavior which will be accepted as evidence that the student has learned" (Hough & Duncan, 1970. p. 81). For example, objectives for one day of a unit on social behavior might be: "After this material, students should be able to explain concepts related to the view of the self and others, including roles and prejudice, and describe locus of control and attribution theory." Benassi, Jordan and Harrison (1994) believe that the construction of objectives assists third-year students by "providing a clear perspective on what is to be achieved within each module, as well as setting boundaries for how much material will be presented" (p. 184).

The second module component requires students to list the books, articles and other materials they used to develop the unit. This is followed by a general and detailed outline. The former, a topic outline of concepts covered in the unit, must include relevant items found in the instructional objectives component at the beginning of the module. "Thus, every objective will be related to specific course content, and there will be no course content that is not tied to an objective" (Benassi, Jordon, & Harrison, 1994, p. 185). This outline is elaborated upon in the fourth component, the detailed outline, which includes lecture materials, in-class questions, descriptions of exercises and demonstrations. The construction of this piece challenges students to evaluate the quantity of information they have relative to their instructional goals. "They begin to learn what must be

covered to meet objectives and what could be eliminated if necessary. Teaching must be flexible, and it is at the level of the detailed outline where TAs can build in that flexibility" (p. 185).

The "Table of Specifications" is an analysis of the correspondence between quiz and test items and the learning objectives detailed in the beginning of the module. It graphs the difficulty level (low, moderate, high) and type (multiple-choice, short answer) of each question on quizzes or tests. The central purpose is to "create examinations that accurately reflect the objectives of a unit of study" (Benassi, Jordan, & Harrison, 1994, p. 185). Constructing a catalogue of test items this way, it is assumed, also makes it easier for third-year students to revise quizzes and tests.

The final components of the teaching module are copies of the examination questions and any other materials (Power Point slides, handouts) to be used in the instruction of the unit.

The process of constructing and revising teaching modules, Benassi believes, helps students "begin to see how things are connected to one another, and that what you *do* in the classroom can't be separated from what your objectives are" (personal communication, May 13, 2006). Ultimately, this understanding will make them more able to adapt to new teaching situations. Change, says Benassi, is an expectation.

At the completion of the second semester of teaching, students must submit a teaching portfolio designed around *A Guide to the Teaching Portfolio*, a publication of UNH's academic programs in college teaching, the graduate

school, and the Teaching Excellence Program (UNH, 2003). Described as a "short collection of materials" that evidence a teacher's "growth," "experiences," and "strengths as a teacher," the portfolio's purpose is to help instructors to "make explicit," their assumptions about effective teaching and their role in that effectiveness (p. 4). Ultimately, the purpose of the portfolio is to model "part of a formal process for reflecting on one's practice and developing one's strengths as a teacher" (p. 2). Curriculum vitae, samples of course materials and a statement of teaching goals are required. Teaching goals are described as "specific areas and ways in which you would like to improve your teaching," as demonstrated by a clear "plan" of action (p. 15). As well, the portfolio includes a statement of teaching philosophy and a statement of teaching competency. The former is described as a "cogent expression of your beliefs, attitudes, and values regarding teaching and learning" (p. 14). The latter is designed as "a bridge between your teaching philosophy statement" and course materials (p. 15). Teachers are expected to assess their success in demonstrating the seven "core competencies" outlined as expectations for all teachers:

1. Articulate appropriate course goals and objectives.
2. Organize and design courses with these goals and objectives in mind.
3. Present material effectively and communicate with students in a variety of settings, including large classes and small groups.
4. Provide feedback to students to give them clear messages about their performance in ways that will help them improve before the semester is over.
5. Employ varied teaching methods that appeal to the various learning styles and "intelligences" of today's diverse student population.
6. Apply your knowledge of undergraduate student culture to specific features of your course design.
7. Incorporate into your teaching the latest scholarship in your field or discipline. (pp. 6-12)

For both semesters of the practicum/seminar, students are required to keep an ongoing teaching journal which they submit regularly to the instructor. This requirement is part of the goal to guide students into thinking about their teaching "in a more systematic way, to think about what they're doing as a scholarly endeavor" (V. A. Benassi, personal communication, May 13, 2006). Benassi believes that seminar participation, teaching, and module preparation will promote change in the students, but "that will happen to the extent that they actively process what happened" by reflecting in a journal.

Dr. Simpson

Dr. Simpson came to the University of New Hampshire over a decade ago as a clinical psychologist with an emphasis on the coping strategies of family units and trauma survivors. She teaches courses in counseling, applied psychology and community psychology. In recognition of her teaching and scholarship, she was awarded the university's Outstanding Professor Award in 2006.

When she arrived from the University of Michigan in 1994, she was attracted to the teaching program in the psychology doctoral program. Her own teacher training as a graduate assistant was not comprehensive, she said, so she met regularly with a small group of colleagues to talk about teaching. Subsequently, she took several courses on teaching offered through the university's Center for Teaching Excellence.

Because the institution does not have a clinical psychology program, Dr. Simpson had no graduate students to mentor, and saw the doctoral teaching

program as a way to address that need. She first sat in on the seminar class, and eventually began to teach the course. Prior to the fall semester of 2006, Dr. Simpson had taught the course twice.

Dr. Simpson identifies herself as a teacher who is constantly learning. Teaching "is something I have to work to be good at, and it feels important to me to be good at it. [The practicum/seminar] keeps me reevaluating and thinking" about teaching. Teaching cannot be taught, she believes. "You can help people learn how to teach," provide them with resources and guidance, but many of the important lessons can only be learned through experience, through "seminars, through reflective practice, through collaboration and discussions." On the other hand, she says, "You can *learn* from other people's experience." Everyone, however, will manifest that learning differently.

As new teachers, the most significant concern practicum/seminar students have is "survival," she believes. So compelling is it, she says, that it often overshadows their sensitivity to student learning. One of her most important tasks as a faculty advisor is to help them find ways to recognize this. Only after continued experience, she says, are new faculty confident enough about their performance to regularly assess its quality against the teaching and learning goals of their courses.

Dr. Simpson contends that teaching is highly individualistic, that the teacher, the classroom, and the context interact. Though teachers can learn from experience, it is important to recognize that "there's no right answer for this. I know what the general guidelines are, so I'm going to go ahead." Learning

through the meanings they make of experience, the graduate students become more and more able to deal with classroom challenges on their own.

An important part of this process, she believes, is the growth of reflective habits. The seminar experience provides a guided opportunity to develop "mindful practice." Although new students are typically uneasy about sharing their perceived deficiencies, this dialogue is essential. "We need to talk about [them] in relation to the readings, and I need to be a part of that dialogue." To encourage this, the seminar must be supportive: "You don't need to do it perfectly the first time, or the second time. Most of us [are] *never* going to get it perfect. We just keep trying to do our best." Her role as an "expert" resource, she believes, is to help them analyze issues, direct them to resources, and "translate" protocols that trace faculty life. As well, she "prods" participants to think in critical ways about their teaching practice.

Her syllabus for Psychology 991: Practicum and Seminar in the Teaching of Psychology states that the purpose of the course is for students "to learn how to teach psychology through direct experience in the classroom, self-reflection about yourselves as teachers, and weekly seminar discussions of both experiences in the classroom and readings about teaching theories and strategies." Dr. Simpson hoped that students would not only gain understanding of the research on teaching, but develop a better sense of "best practices" like lecturing, discussion and student evaluation. Students would apply course materials to their own teaching practice, and develop skills "in evaluating and being self-reflective about your teaching and your students' learning."

The completion of four teaching modules was required before the fall term, and subsequent modules were due two weeks before their application so that she could offer revision comments. Each week, students were to come to seminar with questions and comments about assigned readings. "You must also each bring to class a recent 'teaching dilemma' related to the topic we are covering." Students were required to keep a teaching journal, including "reflections on each class," successes and challenges, and videotape two of their classes. Dr. Simpson would review the tapes, as well as her observations from an unannounced class visit, in individual meetings with each student. A reflection paper describing "what you notice and learned" was required for each videotape.

W. J. McKeachie's *Teaching Tips* (1999) and R. J. Sternberg's *Teaching Introductory Psychology* (1997) were required texts, although Dr. Simpson assigned a number of additional readings. Topics included text selection and design, teaching modules and ethics, teaching anxiety, lecture, discussion, classroom assessment, student evaluations, testing and grading, writing and learning styles, and gender as it related to college teaching. Around mid-semester, Dr. Marcello was scheduled to visit to talk about a required course change students had to make for the spring. Towards the end of the semester, each student was assigned to bring to the class on alternative classroom methods a "favorite demonstration or active learning exercise." Two classes were cancelled to allow time for students to study for comprehensive examinations.

Dr. Simpson's behavior during the fall seminar sessions exemplified her beliefs about the guided discovery of learning to teach, one in which the reflective

dialogue of the group was essential. As she modeled an approach of discovering and analyzing underlying assumptions and beliefs about their teaching, Dr. Simpson provided the cohort with ways to think about, and act upon, their teaching behavior. By her own admission, she did not explicitly pattern her actions after Shon (1989); however; her interactions with the cohort exemplified the coach-student dialogue which he believed fostered the development of reflective practitioners.

Perhaps it was her "therapist model," she said, that contributed the creation of a safe environment, one in which participants were encouraged to voice ideas-in-progress or questions which elsewhere may have seemed naïve. She did this in a number of ways, including the use of a rhetorical stance which eschewed assertion and valued discovery. Aware that participants would have liked for her to tell them what to do, she (except for very technical matters like scheduling) turned their expectations back on themselves. For example, when Christian expressed a tentative idea that he might serve his students a "buffet" of different teaching methods, he may have been seeking a validation or contradiction from Dr. Simpson. Instead, what she validated what his hypothesis-making. There was nothing "wrong" with experimentation, she said, implying that uncertainty was an acceptable starting point.

During the fall seminar, students regularly voiced uncertainty, confusion or frustration: "I'm not sure what to do," "I don't really know," "It seemed like an efficient method at this point," "I was worried," "It's a little murky." By providing an

environment in which indeterminacy was recognized, even valued, Dr. Simpson established a way for the group to view their teaching:

> The problems of real-world practice do not present themselves to practitioners as well-formed structures. Indeed, they tend not to present themselves as problems at all, but as messy, indeterminate situations. . . . If they are to get a well-formed problem matched to their familiar theories and techniques, they must *construct* it from materials of a situation that is, to use John Dewey's (1938) term, "problematic." And the problem of problem solving is not well formed. (Schon, 1989, p. 4)

That the seminar provided a safe environment within which ideas could be shared, however, is not to say that Dr. Simpson had no expectations for the group's behavior. The seminar was designed as a forum for describing teaching practice, problematizing it by articulating concerns, and analyzing it by proposing hypothetical responses. Under her mentorship, members were clearly expected to do this work. Bring concerns and questions about the readings to seminar, she said on the syllabus. Be ready to share teaching problems. Teaching experience seemed as important a source of understanding as knowledge about best teaching practices: "What did you take from your own experience as teachers and students, and from the readings, about the use of discussion?"

Occasionally, Dr. Simpson opened sessions with, "So, classes going okay?" More often, she asked members to talk directly about "problems," "issues," "challenges," and "dilemmas." Framing instances of practice as problems was the first step in a process to reflect about teaching.

She modeled ways for students to define and analyze problems by regularly asking them to consider the advantages and disadvantages of teaching action. By listing on the whiteboard participants' opinions about the "pros" and

"cons" of a method or an approach, Dr. Simpson engaged them in essential components of reflection, problematizing experiences and unearthing the assumptions that inform them. For example, participants had read about, but not yet used, class discussion in an early seminar. Dr. Simpson organized their conversation around, "Why would you want to use discussion in your class?" "Are there any cons to using discussion?" In another session, she asked, "What do you see as the positives and negatives of multiple choice questions?" A subsequent dialogue focused on time and grading. Rather than ending the discussion on that technical level, she encouraged deeper exploration by asking, again, "Any other pros/cons?" She countered an unexamined conclusion about the worth of different types of exams by saying, "What do we mean by 'bad options'? What are some of the pitfalls and problems in terms of how questions are written that are 'bad' for multiple choice?" Throughout the semester, Dr. Simpson modeled ways to reflect upon teaching.

Although she always spoke in an inviting and quiet voice, and seemed nonplussed by long stretches of silence when no one responded to her questions, Dr. Simpson nevertheless demanded an analysis consistent with models of reflective practice: "Does anyone have a thought?" "I want to *push* everybody to think." She expected the group to justify a potential action by explaining its relevance to their teaching goals. For example, when Stacey said it probably was not a problem that her students were more attentive to definitions of terms than analysis of concepts, Dr. Simpson replied, "Is our objective really for them to learn this huge body of terms?" When the group expressed an

unexamined assumption that classroom assessment was necessary, Dr. Simpson asked, "What are you going to do with the information?" When Christian proposed that a cumulative exam might be useful, she asked, "Why? Think about your learning goals. Think about what you are trying to do in the classroom. How are those learning goals achieved by *not* doing a cumulative exam? What particular learning goals might be achieved by *doing* a cumulative exam?" She focused discussion about the use of writing assignments on justifications that were based upon stated course objectives: "When you are thinking about the writing assignments that you've given, and how you're using writing in your classes, why are you using it? What are you hoping it will achieve in terms of learning objectives?"

This reframing of the problem in relation to their teaching goals was the predominant, though not the only, lens Dr. Simpson challenged the group to look through. Often, she suggested another perspective by offering a counter-explanation to the one participants offered. Julia said that her students were reluctant to engage in an activity because they were unsure about their understanding of class material. "Do you think that it is a function of the particular class that you have, with most of them being freshmen?" asked Dr. Simpson, advancing the consideration that her students' behavior may have been tied to the specific makeup of the class.

Because her ultimate goal was for the cohort to "develop a framework for answering" questions about their teaching, for engaging in "their own critical thinking process," Dr. Simpson carefully negotiated her role. She was very

aware, she said, of her powerful position, in participants' minds, as an expert teacher. She often found herself wanting to say,

> "This is what you should do," but that's not going to help because, ultimately, that's maybe one of *five* things you could do. They're *wanting,* just tell me what to do, and I'll go do it. Tell me what to put in my module, and I'll do it. Tell me what to cover in the textbook. I *can't.* You need to decide. You can figure that out, and then I'll ask you questions, and I'll try to get other people responding. "What do other people think? Is that the way *you* would handle it? How *else* might you think about this?"

This belief was demonstrated by her habit of responding to a question with a question. Only after the group had discussed the matter did she describe some of her own practices ("One of the things I like to do"), make suggestions or give advice: "The truth is, [Stacey], what you're talking about is a blending, having a whole series of tools that you can use." "I see it as a kind of coping with stress. There's not just one thing that, if you just did it all the time, you'd be fine, you'd never be stressed in your life. The more tricks you can use, the better off you'll be."

Dr. Simpson's guiding assumptions about the role of a mentor in the development of reflective teaching seemed to correspond with those articulated by Shon (1989):

> The student cannot be *taught* what he [sic] needs to know, but he can be *coached.* 'He has to *see* on his own behalf and in his own way the relations between means and methods employed and results achieved. Nobody can see for him, and he can't see just by being "told," although the right kind of telling may guide his seeing and thus help him see what he needs to see'" (1974, p. 151). (p. 17)

Dr. Marcello

Dr. Marcello came to the University of New Hampshire from Dartmouth College and Brown University in 1979. He holds a department position as a professor of psychology, with a research focus on vision, and a graduate school position as a Professor of College Teaching. He has been awarded a university teaching excellence award.

His first teaching experience as a new faculty member, he says, was "on-the-job-training." Though it was not accompanied by a teaching practicum, he did take a semester-long seminar, using McKeachie's *Teaching Tips* as a text, before stepping into a teaching role. The course had a significant impact, he says, because it taught him to think about teaching in ways he would not have. "I *thought* about the goals of the course, how the course might fit in with a curriculum [in] psychology, or within the larger curriculum of liberal arts. I thought about the mechanics of teaching in a way that I'm not sure. I would have otherwise."

When he was invited to teach the practicum/seminar over ten years ago, he was already convinced of the importance of developing teaching skills in future faculty. He began by sitting in on the seminar for two semesters, and since then has taught it regularly in both the fall and spring.

Dr. Marcello believes that it is "unconscionable" that graduate students with intentions of securing future faculty positions are not regularly instructed in teaching. Any new faculty member without an understanding of how to teach will likely, he says, be overwhelmed. As a result, their scholarship will suffer. The "old

idea" that faculty could somehow "impart" what they knew and that students would absorb it, he says, stemmed from a notion that knowledge was somehow more important than the method used to convey it. As a psychologist, this idea is counter to what he understands about learning.

Participants in the program, he believes, can be told "what they need to know" about teaching. They should be given instruction on the more mechanical aspects of teaching: how to construct teaching modules and tests, how to design lectures and syllabi, how to maintain eye contact and voice level. "You have to crawl before you can walk." Until they have experience in the rudiments, teachers cannot develop the skills evident in more masterful teachers, such as "making links to areas outside of one's discipline," with less of a compulsion to "cover" a certain amount of information.

To explain the profile of new teachers, Dr. Macello uses the metaphor of driving a car:

> Learning drive a car was, . . . I've got the steering wheel. I've got to put on the directional signal. Wait a minute! I've got to look at the mirror. *And* I've got to shift! Oh! There's a car! All these things. You're not really enjoying the process of driving. You're worried about all these mechanics. Teaching's the same way. You're worried about, "Am I speaking clearly? Loudly enough?"

Success as a teacher, he believes, is a result of many things, including sensitivity to and empathy with others, as well as a "desire to share knowledge." Learning to teach is often a matter of making mistakes and revisions, a process that is facilitated when a faculty supervisor provides support. He sees his as a coaching role, helping students negotiate "the rougher times" and supporting

their efforts to take risks. A central role the coach plays, he says, is to provide feedback, as they may not yet be able to read the behaviors of their students.

He cannot imagine that students completing the program will not exit without a better understanding of themselves as teachers, though he is unsure whether the ability to consistently and consciously reflect on practice is a reasonable expectation. That would be "nice," he says, but, because participants are busy negotiating the mechanics of their first year of teaching," it probably never occurs to them to reflect." Master teachers, he expects, are more apt to engage in this kind of thinking. "It will come with time. It's like driving a car. Eventually, you can turn on the radio and listen to music. You can carry on a conversation."

Dr. Marcello's syllabus for the practicum/seminar read: "The principal goal of the course is for you to continue to learn how to teach, primarily through practical experience." He explained that students would meet in seminar to discuss readings "through which you will be able to gain the appropriate theoretical background for teaching." These readings included selections on the teaching portfolio, using Power Point, team and large-class teaching, advising, teaching statistics and professional development. As well, a number of topics related to issues of faculty life (tenure, the Greek system, service responsibilities, athletics) would be researched and presented in seminar by participants.

Describing that he would meet with participants individually to provide feedback on course observations and videotaped classes, Dr. Marcello invited

them to meet with him often about "teaching concerns." "My door is always 'open'—even when it's closed!"

For each required reading, students were to submit questions and comments to him beforehand. As well, he asked them to maintain a teaching journal to include responses to, "What went well? What went poorly? What should you do differently next time?" At the end of the semester, they were to submit a teaching portfolio, the specifications for which were detailed in a guide developed by the graduate school and the university's Teaching Excellence Program. This document was to include a "statement of philosophy of teaching and learning," "methods used to assess student learning," "statement of teaching competency," "course syllabi," "analysis of samples of student work related to course objectives," "analysis of student evaluations," and "statement of teaching goals." The portfolio was not to be seen as "a finished product." Instead, it would serve as an evaluative tool to identify ways they might improve future teaching.

A course requirement not listed in the syllabus, but conveyed the previous semester when Dr. Marcello visited the seminar, was that participants make a significant change to their fall course to be implemented in the spring.

Dr. Marcello did not specifically mention in the syllabus that seminars would include discussions of participants' teaching issues. Nevertheless, he opened each seminar with the opportunity for the group to talk about the previous week's teaching: "What have you got to report?", "How are things going in class?", "Anything happen in class worth discussing?", "Things that worked well?", "Does anyone have anything they'd like to talk about?", "What's new in

the world of teaching?" Like Dr. Simpson, he invited the group to share their teaching experiences; unlike her, his language did not privilege "problems" or "teaching dilemmas." Perhaps because they had learned to do so previously, however, group members regularly raised problematical issues they wished to share with the group.

Neither did Dr. Marcello consistently work through Dr. Simpson's protocol of identifying a felt problem, raising implicit assumptions, and assessing possible reactions. In discussion, his questions were more regularly addressed to the individual who raised the issue, rather than to the group. Most often, those inquiries encouraged him or her to elaborate on the situation, after which Dr. Marcello often gave commentary or advice.

This was apparent the day that Marcus said that he had some concerns about a "problem" student. After he gave some general descriptions of the nature of the potential problem ("doesn't really know when to be quiet," "likes to draw attention to himself"), Dr. Marcello asked for specific examples. Then he asked whether the student ever contributed positively. Once he got the information, he identified the issue as a challenge for Marcus to decide to what degree the student's behavior was disruptive. When Marcus began brainstorming the different ways he could respond, Dr. Marcus interjected by saying, "Yeah," "Sure," and smiling. Finally, he gave some direct advice. Whatever response Marcus chose, he said, he should "sandwich" criticism with praise. In that way, Marcus would have a better chance of establishing a relationship that would result in improved behavior.

In another seminar, Christian began by saying that, because students were not reading the syllabus, one student had submitted work that did not comply with the requirements. First, Dr. Marcello asked whether every student, or just one, had submitted an inappropriate assignment. Then he asked whether Christian had been reminding students of requirements on a regular basis. When he had ascertained that he had, Dr. Marcello said, "That's the best you can do," reminding him that, if more than one student had not complied, the problem would take on a different nature.

Throughout the semester, Dr. Marcello approached the problems brought by students in this manner. They would begin by stating a generalization or revealing a feeling ("There's something going on with more dishonesty in my class"). He responded by asking for the "facts of the case" before offering commentary, advice, or explanation of how he solved a similar issue.

This tendency to identify the many variables that might lead one to a conclusion before identifying a potential response seemed congruent with a belief, demonstrated frequently throughout the seminar, that first assumptions are not always valid. "Things are not always as they appear to be." In this way, Dr. Marcello modeled a way to determine the problematical nature of a situation. Julia, for example, wondered what she should do about two students who had previously failed the course and were, once again, doing poorly. Dr. Marcello suggested she meet with them to "probe" the reasons for their previous failure before acting upon an unfounded conclusion. The meeting could reveal a detail that would suggest a way she might assist them; as well, it might reveal that they

were simply "goofing off," something she could do little about. When Stacey said that a class exercise did not work "at all," Dr. Marcello asked her to explain how she set it up. Her explanation revealed to him that she had not provided a crucial component; as well, he indicated that she may have assumed students understood her instructions when they had not.

Though he may not have recognized this tendency as a way to direct seminar participants in problem-framing, it may have had the same effect as Dr. Simpson's entreaties to explore the advantages and disadvantages of teaching behaviors. That is, if they followed Dr. Marcello's model of introspection, participants might have unearthed some of the assumptions and beliefs that informed the responses they first arrived at. By considering the likelihood that situations were not as they first seemed, he demonstrated an assumption that teaching problems are complex and not easily solvable.

Another way this thinking protocol was demonstrated occurred when Dr. Marcello modeled ways to weigh alternatives. Christian announced his surprise that students did not actively participate in his quiz review session. After probing for a thorough explanation of what had occurred, Dr. Marcello responded:

> I'm just wondering if one approach is to say, "All right. If they're not going to participate, and they won't show up, then that's fine with me." But another approach would be to give them more guidance, more clarity. Be more *specific* about it: "This first session didn't work out so well. You didn't do what I asked you to do, so let me make it a little clearer and more specific about what I'd like you to do." You might even do something like, "You have an entrance ticket [to the review session]. And your entrance ticket is a question. You can't come to my review session unless you have a ticket."

Dr. Marcello qualified this by saying that he was "just talking off the top of my head"; however, dramatizing options that Christian could take allowed him to work with "real" features of the event, rather than solve the problem with abstractions and generalities.

Nevertheless, Dr. Marcello was much more apt than Dr. Simpson, after discovering the facts, to make statements of positive assessment: "I think you *are* doing the right thing," "That's part of good, good teaching," "You've done a very conscientious job of preparing them." This confirmation may have conveyed the message that, while many things about teaching were not easily discoverable, participants were capable of achieving some success, despite their lack of experience.

Dr. Marcello was also more apt to give suggestions for teaching behavior than Dr. Simpson. "Treat every student like she or he is your own child." "Maybe they just need to be taught a small lesson." "Have you thought about giving them a five-minute quiz?" Like Dr. Simpson's, this advice was qualified. It was not the only one students should consider.

CHAPTER V

MARCUS

Coming To The Third Year

Marcus described himself as "a little bit older than the rest of my cohorts," as his bachelor's degree in sociology and environmental studies was completed at Trinity College in Hartford, Connecticut in 1999. He traded his books for ropes courses and rock climbing at a subsequent outdoor education and leadership training job in Ohio. In 2001, he entered a graduate program in education at the University of Michigan, hoping to combine his interests in the outdoors and teaching: "In the back of my head, I always had this idea that I wanted to start my own school at some point that incorporated the outdoor components, within the form of a college or university."

An internship in the school's counseling office convinced Marcus that he wanted a more developed relationship with students than the short-term opportunities a service role provided. He discovered that working indoors did not suit him. The administrative career path of his graduate program, he realized, would not likely fulfill his need to teach outdoor education in a natural setting. Committed to finishing what he had started, however, Marcus completed the two-year program in one and relocated to Boston to work for Outward Bound.

During his year in Boston, Marcus researched leadership and group process at Harvard's Kennedy School of Government and decided to pursue a

doctorate in those areas. His subsequent decision to apply to social psychology Ph.D. programs was hampered somewhat by the absence of an undergraduate psychology degree. Marcus chose the UNH program in 2003 because of the teaching focus. "I didn't see myself being happy conducting research eighty hours a week, being in a research intensive program." Teaching, however, was something he valued, as he realized the significance it had played in his own life:

> Who do I remember most from [my college] experience? It wasn't necessarily the administrators. It wasn't any articles that I read from great researchers. It wasn't taking classes from people who were interested in research, but it was the actual teachers themselves that were inspiring to me, regardless of what they did in their scholarly work. These are the people I remember, so I saw it as a great chance to interact with students at a level and with a topic matter that would be inspiring to me.

A year into the program, Marcus changed his research focus to environmental psychology and designed a research agenda around people's attitudes about environmentally responsible behaviors. The uniqueness of this area of study, he said, limited available resources, both at UNH and nationally, but the fact that he was breaking new ground appealed to him. He has presented some of his work at national conferences.

Excited about his research focus, Marcus was, nevertheless, unsure of the nature of his future career. He felt constrained by the physical containment of the classroom. His values, he said, were not always reflected by the content and method requirements of the formal classroom. "So there's frustrations I have with some of that stuff. I couldn't really picture myself being in a tenure track role at a place like UNH." He would feel more comfortable teaching at a smaller institution, one with "more of a communal atmosphere where I felt like some of the things

that I believe in, some of the values I believe in, were valued, like having a more sustainable campus and having more than the classroom experience. More experiential." Nevertheless, Marcus believed that all of his prior experiences enabled him to shape his direction, and said he welcomed the challenges of adapting some of his outdoor activities within the confines of the classroom at UNH.

Before teaching his first class in August 2005, Marcus had taken, through UNH's Preparing Future Faculty program, one course on cognition and teaching and another on effective presentations, and was undecided if he would complete the Cognate in College Teaching.

The Fall Semester

Narrative

Marcus began his practicum by teaching one section of Introduction to Psychology to a class comprised largely of first-semester first-year students.

Under "Course Description," Marcus's fall syllabus read, "Lectures, discussions and experiential activities will provide students with many opportunities to describe and comprehend important psychological concepts." Course objectives included "the ability to think critically" and to "apply psychological theories and concepts to modem day situations." A paragraph designated, "Classroom Exercises," read, "There will be many classroom exercises and group discussions during the semester. Students are strongly encouraged to participate." Under "Respect," Marcus wrote, "The classroom is our forum for open discussion." Under "Course Requirements," he described an

end-of-semester debate, how student groups were to be organized, and the requirements of the assignment.

Throughout the semester, Marcus kept a teaching journal that consistently described, albeit briefly, his use of active learning techniques, including demonstrations, class exercises and group discussions. He opened the journal with a notation that he spoke too quickly on the first class day, evidence of his anxiety. Once he got students out of their seats and active in a scavenger hunt, he was "very pleased." He even played the game himself, hoping to demonstrate that "we are a group. Not me. Them." Only after the activity did he briefly outline the syllabus.

"All went well," he wrote the second day. He opened class with a description of Kurt Cobain's suicide note, and then formed small discussion groups, asking students to use what they had learned in class and text readings to "analyze Cobain according to different perspectives. They enjoyed this. I will do this again." Noting that he had not included an activity on the topic of the major areas of psychology, he said that he "needed" to find one, something that would get the class "up and moving around."

As the semester moved on, Marcus most often mentioned exercises, discussions and activities that "went well" and about which students were "excited." He was "happy" when his students readily discussed left/right brain differences, remarked that the information processing demonstration was successful, and said students seemed to enjoy an activity with a water gun and working in large groups. A Jeopardy-based review session "seemed to go over

well." When students seemed confused about afterimages, he reminded himself to develop a demonstration, because the concept was "important."

When he introduced the topic of psychobiology, however, his positive reactions to class changed. "My worst day of class." The projector would not work. Students were disgruntled about quiz grades. He was trying to include too much material in each class. He was, generally, overwhelmed by all the work he had to do. "Today has been frustrating."

In an interview a few days earlier, he expressed concern about his competency in biology-based lessons, given his background was in sociology. "I think that when I start to think about some of the topics that are coming up, that's when I get a little anxious about, okay, do I have the perfect knowledge about neurotransmitters?" He probably knew more about biology than he gave himself credit for, he said, and compared this situation to other anxiety-producing experiences in his past, saying he had always been able to succeed nevertheless.

The class day after his "worst," Marcus described how he changed his teaching approach and revised his Power Point slides. Instead of lecturing at length, he formed small activity groups and asked students to work on locating the parts of the brain. This was followed by a class discussion about neurotransmitters. Before students left, Marcus asked them to write down one positive and one negative comment about the class. "Overall, the feedback was good," he wrote. "They seemed to like the lectures and group activities. They said I made things simple enough to understand." While there were suggestions

about the pace of his lecture and the content of review sessions, no one remarked about his compromised content knowledge.

In the subsequent seminar, Marcus did not mention the concerns of his stressful day. Responding to Dr. Simpson's query about the results of his first test, he said scores were better on multiple-choice questions than on short answer and essays. The problem, he said, was that students did well on material that was covered in class, but not so well on content they were required to read on their own. They complained, "We didn't cover this in class." With a surprised look on his face, he said that he had told students in the beginning of the semester that they would not be going over in class everything they were required to read from the book. Students said that the textbook was boring. Grinning, he wondered if they criticized the text "because they don't want to attack me personally." He was "concerned" about how he was going to get them to read the book, worried that "if I only test on what's in class, they'll just stop reading the book."

Christian expressed a similar worry, but noted that, when he came to a part of the class where students should have read material from the text, he simply reminded them that they were required to do so. Marcus said he preferred to take a different approach. He could "adapt" his behavior to meet the students' reaction. He would try to cover textbook material in lecture and then use "demonstrations and examples to further their knowledge of what's in the textbook." He had no problem with that.

The journal entries revealed concerns or questions about his use of active learning. When two class demonstrations did not go over as well as he would have liked, he hypothesized that, in one case, he had given students too difficult a task. In the other, he had not allowed sufficient time. "Next time" he wrote, he would address these issues. On another occasion, he noted that he "really liked the idea of students asking questions" in a review session, but was surprised that his students did not feel the same. Perhaps, he speculated, this was because "it made them think/work harder." He said that he would use this format for the next review session.

In the second review session of the semester, he "really screwed up" when explaining some terms. This worried him. "Have I lost my credibility? Will there be a mutiny?" This was followed immediately with the conclusion that everyone made mistakes. He was concerned that students "remain quiet and reserved. Still have the same ones speaking up. Others speak up only in small groups." Marcus emailed Dr. Simpson about the issue, so, at the next seminar, she asked him to explain. Not only did he give incorrect terminology, he said, but "one of the students actually *caught* me on it! I was glad that he was able to correct me on the terms that I had mixed up, but then I was worried about what that was going to do to my credibility as their teacher." He immediately told his students that, sometimes, a teacher had so much to remember that he made mistakes. "I don't know. I don't think it was going to be a huge deal, but I don't know. I don't know." His students probably did not expect him to be correct every time, but they may have expected that he would be accurate "at least on the facts and terms."

Christian said that students often do not notice mistakes on their teacher's part, because they were too busy writing notes. Marcus said he hoped his students were not so consumed with note taking that they did not have the time to think about what their teacher was saying.

The topic he misspoke on related to sensation and perception. "I *knew* at some point I was going to flub up a couple of lobes or something," he said, laughing. She could not imagine, said Julia, that the incident could have any lasting effect, given Marcus's personality and engagement with his students.

Dr. Simpson redirected the conversation, asking what everyone's assumptions were about their teaching roles. Did they see themselves as infallible sources of right answers? As having some special access "to the truth, capital T?" Remember, she said, that one of their goals was to move students beyond the dualistic thinking of beginning students, as described by Perry (1970). They should be modeling more sophisticated levels of thinking, valuing critical thinking and evaluation, not simplistic notions of right and wrong. "Showing them that teachers are imperfect is part of that," she said. Just the day before, she had mistakenly put one of their class readings in the wrong folder. "Have I lost all credibility?" Everyone laughed. Making mistakes, she said to Marcus, actually enabled teachers to empathize with their students.

Shortly after mid-semester, a class discussion on the effects of drugs and alcohol resulted in Marcus's most lengthy journal entry of the semester. Dr. Simpson observed his class that day. In his journal, Marcus revealed:

> There were some comments that kids made especially regarding alcohol that caught me off guard. Next time, I want to be able to directly reference a few articles that discuss each topic. I couldn't believe kids were promoting drinking while writing papers! Next time I will be able to reference articles that discuss the deleterious effects of alcohol on the cognitive process. On a positive note, I liked the format of the class and will definitely do this again, but hopefully be better prepared next time.

In an interview, Dr. Simpson indicated that Marcus was "really good" at moving away from lecture and getting his students to talk, but she had a conversation with him after this class observation about ways he might encourage students to evaluate the ideas they express in discussion. "How do you push them to that next level, and how do *you*, potentially, offer them other information and resources so that they can go beyond?" She asked Marcus to think about ways he might have guided students to critically evaluate the idea that drinking enhanced studying. "That's one thing that he's really working on, which I think is great."

Marcus wrote another long entry the day three guests came to his class to speak about expressive arts therapies. Because several students were interested in music, Marcus said he thought "this would be a great way for them to see psychology and music combined." When the guests asked students to engage in some unusual "experiential activities," he thought some may have been uncomfortable. Nevertheless, he said, "I think that quite a few of them really got something out of the exercise."

While Marcus reported on active learning techniques in his journal, he was prompted to talk about them more elaborately within the seminar discussions. In some cases, active learning was the assigned topic of reading and discussion; in

others, Dr. Simpson prompted the group to talk about a particular issue related to active learning; in still others, the impetus for Marcus to reflect emerged as a response to a problem expressed by Christian, Julia or Stacey. In one instance, Marcus said he had a question about an activity that he wanted to share with the group.

The required reading for one week of seminar focused on the use of discussion groups. Remember, said Dr. Simpson, as she opened the discussion, that the value of any teaching method is dependent upon its correspondence with identified teaching goals, "to some of the things that we hope are going on in our classes."

She focused first on their experiences with discussion. "What did you take from your own experience as teachers and students and from the readings about the use of discussion?" No one spoke. Then Marcus replied:

> I found it good to use in situations where people may have strong opinions on certain topics. Discussions can take on their own personality. They don't necessarily need a lot of structure if it's a controversial topic, or an issue that students are familiar with. I struggle more with trying to come up with discussion questions for topics like biology. I think you need more structure, planning.

While he had not yet decided the best way to structure class discussions about some topics, he hoped that, by using a text focused on current social controversies, he could organize discussions where students in his class would "have lots of opinions."

Getting up from her seat and moving to the white board, Dr. Simpson asked the group to brainstorm reasons for the use of discussion. Stacey and Julia both said that discussion moved the focus away from the teacher and onto

the student. Why would that be a good thing, asked Dr. Simpson. When students were engaged, said Julia, they might also be learning. Marcus said that discussion was a way to help students develop the skill to articulate their thoughts, a goal identified on his syllabus. Both of these ideas, said Dr. Simpson, exemplified how discussion linked to course goals, and she reminded the group of an emphasis repeated in many of the readings: "A number of articles talk about what is really happening in the learner-centered classroom. Can't just [be] making deposits in the bank passive model. Actively working with material. Deep processing."

She then moved to the disadvantages of discussion. Christian mentioned "time," and Stacey described how the readings made her realize the importance of taking the time to reflect upon structure and purpose before using discussion. Teachers, and even students, may mistakenly assume, added Marcus, that crafting discussion requires little effort. He had found that it demands "lots of prep." Acknowledging these challenges, Dr. Simpson said:

> At the heart of this distinction between a focus on teaching or a focus on learning. If you're focusing on teaching, it does seem much more efficient to just have these polished, really well organized, awesomely delivered lectures. Part of the time, the issue is related to control. That's the big thing. Even with all this preparation, once the focus is off the professor, you need to still be in control of the discussion. Once you get students talking to each other, particularly talking about controversial stuff, there's all kinds of stuff that can happen that's not tightly planned. No discussion is ever going to be quite the same.

What factors make discussions effective, Dr. Simpson asked. She then turned to Marcus, saying that he had previously asked her a question about giving students discussion questions ahead of time. "What are some of the pros

and cons?" First, he said, students might not be developmentally ready to engage in discussion at the beginning of the semester. Providing questions beforehand might be appropriate. On the downside, he was "concerned" that this kind of support might become a "crutch," and that students would come to depend upon the teacher for developing questions. He offered one solution. "Maybe it could be a process, so that, in the beginning, I'm giving that to them, and then towards the end of the class, they're giving it to *me.*" In this way, he said, he might be able to communicate that understanding the main points in reading was "really subjective, to some extent." He believed that there might be many valid interpretations of information.

After Christian brought up an earlier question about the efficacy of class discussion on certain course topics, Marcus admitted that he had been "thinking the same thing." Rather than agree with Christian, who said he could not "possibly" have students discuss neurological processes, Marcus said he had been wondering about whether even a "functional" topic like that could be the subject of discussion:

> An example I was thinking about that's pretty current right now is they've shown the effects of certain performance enhancing drugs, and what that does to your body. A question I was thinking about--and there's a big thing in baseball whether athletes should be able to use these performance enhancing drugs, knowing what it does to their body. It's a topic that could be debated.

There were at least two problems with this idea, he admitted. Not only was the topic "a little bit tangential," meaning that it might not relate to everything students were learning about the nervous system, but he wondered about the advisability of requiring the class to discuss an "illegal" practice.

The group continued to talk about some of the challenges in using class discussion. Stacey anticipated a problem with controlling how students responded, as a few of her most vocal students had already spoken up without prompting. How could they ensure, asked Dr. Simpson, that discussions gave all students the opportunity to participate. One way, suggested Marcus, was to break the class into small discussion groups. He had tried both large and small groups, and had observed that the latter allowed quieter students a safe opportunity to speak up. Once again, he said that the level of student development was a factor he considered in planning class discussions: "Being able to gauge where the class is. And if I feel like they've got a firm understanding of the material, I can get into some conceptual and applied stuff. But if I feel that they're still at a basic level, then I'll have to focus on that."

Marcus asked the group's advice about the advisability of awarding grade points to winning teams in a class game he was contemplating. "What does everyone think? What are some of the pros and cons?" asked Dr. Simpson. She moved to the whiteboard to record their responses, asking them to think first about the learning goals, the purposes, of awarding points to begin with. Marcus offered that it could create an incentive to participate in the game. Others suggested that class enthusiasm might be increased and that students might be more motivated to prepare for the game—though some students might feel stigmatized if they did not earn points. At this, Dr. Simpson asked, "Is there a way we can meet these goals without the cons?" Refining Christian's suggestion that all students received points for participating, Marcus said that he had "been

thinking" a point scale might work: "Even if your team came in last, you'd still get some points." He wondered, though, if students really needed to be rewarded for something they might like participating in anyway. A concern he had was that students might feel alienated from peers if they gave incorrect answers. In response, seminar participants proposed giving rewards other than points.

The discussion topic for the mid-semester seminar session was the use of active learning. Several readings were assigned. These included Barbara Gross Davis's (2001) chapter on collaborative learning, which opened with, "Researchers report that, regardless of the subject matter, students working in small groups tend to learn more of what is taught and retain it longer than when the same content is presented in other instructional formats" (p. 147). Other articles analyzed the appropriateness of active learning in college classrooms. Dr. Simpson asked Marcus, Christian, Julia and Stacey to come prepared to describe the active learning techniques they had used so far.

Dr. Simpson began the discussion by asking the group, "What did you think about the arguments in terms of what some of the limitations or costs may be of using these kinds of active learning strategies, and what do you see as the pros or the benefits?" She reminded them of earlier readings which advocated the use of a variety of teaching methods besides lecture, saying all four of them had constructed their classes accordingly. They were not "just *talking* at them for 40 minutes, but you're breaking it up and doing different things." This, she said, seemed counter to the argument Mattson (2005) made about the detrimental

effects of using active learning. "What do other people think about his arguments?"

Both Stacey and Christian noted ideas they agreed with in the article, especially the caution that active learning strategies should not be used simply because they were currently popular. Then Dr. Simpson spoke for several minutes about issues Mattson (2005) raised, describing his perspective as a "devil's advocate." When Christian remarked that active learning seemed to be a "fad," she said only, "Mmm. Hmm," and then continued to talk about Mattson's (2005) indictment of higher education. The article raised questions, she said, about the way active learning was being defined, saying that, ultimately, assessing the appropriateness of active learning was always a question of context. "The learning context when you're stuck in the lecture hall when you're a student is *not* the same learning context as if you get a small class." In the end, she said, the article was useful because it raised issues about the broader institutional context in which teaching methods were used.

After several minutes of speaking, she said, "If you're going to do active learning, you want to do it effectively. But what do you have to do to make that happen?" Stacey described how her lack of preparation contributed to an unsuccessful activity. Dr. Simpson described a similar experience of her own.

She said that the most important question that needed to be asked before using active learning is why. However, not every teacher will be comfortable using it, regardless of course goals:

> And that's okay, you know? I think that's also what [the reading] is trying to rail against, which is one size fits all, that all of us need to be . . . I can try to be the best Intro pysch teacher that I can be, but it's got to be the teacher that's me. So that may mean that there are some things that I will do that are like what you do, but there are probably also other things that are very different. And I think we have to be comfortable with that. It's good to stretch ourselves, but, I think, sometimes you can go *way* out of your comfort zone.

Dr. Simpson summarized the important considerations about the use of active learning techniques. Be prepared beforehand. Think about how activities fit with your course goals. Realize that many different kinds of activities fall under the broad category, "active learning techniques." Determine your comfort level about using them.

Julia, referring to a reading which advocated the use of study groups, asked whether they would be appropriate in a class like hers where there were wide variations in ages and grade levels. Marcus did not offer an opinion, but spoke about how he addressed that issue in developing a major course assignment, group debates about controversial topics at the end of the semester. His class would be divided into teams, and, based upon course readings, they would argue different sides of an issue. One team, for example, had to "defend the use of drugs for psychological treatment." By meeting outside of class several weeks before the debates, groups might be able to organize themselves better as teams.

An "issue" with this plan, however, was how he was going to assess that everyone in the group was working. He sought the advice of another faculty member, who suggested he require students keep journals of their activities, recording their interactions with other group members. This became a

requirement for the debate project: "If you're in a group, hopefully, that will be motivation. You know, if you know you're somewhat accountable and that the other group members won't just carry all the weight." As far as project grades, Marcus said he was thinking that everyone in a group would receive the same, but had not made up his mind. Dr. Simpson suggested ways Marcus could have the groups work in class on the project.

The discussion continued to focus on active learning techniques group members had tried. Dr. Simpson asked Marcus to talk about a modification he had made to a Jeopardy-based review activity. First, Marcus identified a problem he had with his first review session. Only a few students participated. He redesigned the game so that each group was required to develop multiple choice questions rather than answer them, and then quiz the rest of the class. "It just got everyone involved. It gave them a chance to interact and get out their questions in the classroom and to meet with other students they hadn't met with as much." While the revision "seemed to work pretty well," the next time he used the activity he would require fewer questions, as students had run out of time.

Christian responded to Marcus's remark that his initial plan disadvantaged less talkative students, saying he could see how that might occur. Marcus said, "Some people are just scared in front of 30 people to say the wrong thing. Whereas, if there's only three or four people, they might be more willing to give their answer."

Marcus described another activity he had used for classical conditioning involving a spray gun that "worked pretty well." Christian responded that he had

"seen that demonstration fail twice." With a surprised look on his face, Marcus began to speculate about some of the factors of the activity that were crucial in its success—the length of the word list, the aversion to getting sprayed with water. "I could see how it could *not* work," he said to Christian. Dr. Simpson described alternative activities under the topic of classical conditioning.

As the semester came to a close, the seminar group discussed the changes they had made over their three months of teaching. Marcus said that he had initially been concerned that he would be limited in teaching the way he wanted to by the reality of the "conventional classroom." On the other hand, he said, he knew before the semester began that he, being a "complete novice," needed to be open minded about the conventions of classroom teaching, rather than uncritically assume that what he wanted to do would be compromised by his new situation:

> I'm just doing it for the first time. I kind of said, "All right. Well, some of the things that maybe I would believe in I can't do." I'm kind of like, "Well, why go down that road right now when I feel like there's so much I have to learn?" If it was up to me, I wouldn't be teaching 30 kids. You know. I prefer to teach ten kids. I prefer not to *be* in a classroom. You know, there are a lot of those things that I would prefer not to do. But this is kind of like where I am right now, and I feel like there's an expertise within the department, and I should take advantage of that because I don't disagree with it all. You know, I would eventually like to incorporate different methods.

At semester's end, Marcus said that he had been able to construct the "communal feel" in his class that he had hoped to. He believed it was his responsibility to create a welcome environment where students "are as much a part of the process as anyone else, including the teacher." This corresponded, he said, with his belief that his most important role was as a facilitator. He did not

"tell them what they're learning, but guid[ed] them through the process, providing them with the frameworks."

Over the course of the semester, he said, he began to understand how to balance and sequence lecture with other activities. By starting with a short lecture, followed by other approaches, he could capitalize on the moments when his students' "attention span was at its highest point." He said that "lecturing by nature is a very difficult way of teaching someone. You can do certain things with a lecture, but it's got to be compounded with other things, the reading of the textbook, and with some demonstrations and activities." Dr. Marcello had advised him, he said, of the importance of getting students "turned on."

On the other hand, he said, he had no scientific way of knowing how his students reacted to his teaching methods. "It's just kind of my estimate of what's going on. Who knows what's really going on in their heads?" Students always seemed to be engaged when he listened in on group discussions. "And the demonstrations, they really seemed to be getting excited about those. So, I've got nothing really to compare it against, I guess, except my own experiences as a student."

He did believe, however, that the end-of-semester debates succeeded in forcing students "to step outside of their comfort zone." However, he noted in an interview that they were not a complete success:

> One of the things that I noticed was that the rebuttals, and their ability at that point to, on the spot, take what the other team was saying and have enough knowledge to be able to really respond and critique the other team's argument in an effective manner, was kind of lacking. We talked about controversial topics in class, but, in terms of debating skill, it's a different skill set. I felt like I set them up in a little way that

> maybe they weren't necessarily skilled to do that critical thinking on the spot.
>
> I've changed it. I want to keep the presentation style. I think it will also be good to eliminate the competition. I'm not a huge fan of competition. That was something I was torn about doing beforehand. So, I'm keeping the presentation, and I want to encourage them to be creative and do some of the things that I encouraged these guys to do in the debate, but I'm taking the debate out.

One thing that he had developed from his first semester teaching, he said, was a better understanding of college-age students' developmental level. In the beginning of the semester, he expected that "they'd be willing to discuss things in an open manner, and that they'd be able to delve into these topics a little bit more beyond the textbook. That they'd be a little bit more willing to share some of their personal experiences." In the end, he said, this was an unfair expectation on his part. He realized that, depending on the class and the topic, sometimes open discussion will happen and sometimes it will not. His ultimate goal, he said, was to provide a framework for content, while creating an environment where students could develop in many ways, including verbal and presentation skill.

Evidence of student reaction to Marcus's use of active learning came from mid- and end-of-semester university-designed evaluations of his teaching. At mid-semester, of the three students who mentioned active learning, all gave positive remarks: "Discussions & group work in class helps me to grasp the material well." "His class activities are very effective for learning." "Demos and hands on/group work seems most effective." Ninety-six percent of students "strongly" agreed that Marcus encouraged discussion questions. At the end of the semester, students remarked, "[Marcus] did great demonstrations and

examples which really helped me learn the material"; "Don't change your philosophy, [Marcus]. A good teacher applies the information, not just reading it."

Analysis

Examination of Marcus's teaching journal and course materials, as well as observations in the seminar and personal interviews, reveals that he most often engaged in reflection about the use of active learning in his classroom.

Active Learning. The frequency with which Marcus reflected in his journal may have contributed to his ability to reflect publicly, as he had documented beforehand his thought process (Colton & Sparks-Langer 1991; Zeichner, 1983). He described active learning more often than any other teaching activity of the semester. At least 50 % of his entries mentioned the use and assessment of active learning, and justification for future action. The value he placed on getting his students actively involved was demonstrated when he chose a scavenger hunt to open his first class rather than the more traditional review of the syllabus. The frequency with which he mentioned class discussion, activities, and student participation in his syllabus is further evidence that Marcus considered active learning an important component of his course.

The way Marcus talked about this issue in his journal fell into a pattern. He first identified the activity, and whether or not it "worked." The beginning of the reflective process occurs when practitioners attend to their experiences and react to them with surprise or describe them as problems (Rogers, 2001). While the character of the scrutiny is described differently by researchers, most agree that, after identification, reflective thinkers further analyze the situation before acting. If

he concluded the activity was successful, he assessed it by noting it went "well," the students "really enjoyed" it, or he was "pleased" by their responsiveness. This was regularly followed by a short description of the signals, including the physical behavior of students and teacher-solicited feedback, that justified the assessment. Because he offered positive comments on events for which students were "excited," "moving around," or creating discussion questions, his reactions may have emerged from unwritten assumptions about what the situation *should* look like.

When a problem is identified, a next necessary step in the reflective process is a "deliberate decision to seek a solution" (Rogers, 2001, p. 44), the ultimate goal of reflective thinking. What that decision-making process looks like, however, is highly variable. When an activity was successful, Marcus said he would duplicate it in the future. When he identified an activity with which he had "trouble," he immediately offered hypotheses about the causes of the difficulty, saying that the activity was too difficult or too time-consuming for his students, indicating the elements that needed to be revised in order to try it again in the future. In both cases, Marcus demonstrated "prudential" discourse, "suggestions of what to do" (Zeichner and Liston, 1987, p. 38).

What was not apparent in the journal was the complex thinking that led him to focus on certain student behaviors. Neither did Marcus detail why these particular observations were used to assess the relative success of activities, or the reasons why he chose certain future actions. His journal reflection is often *descriptive*; he made an attempt to justify his action, but in a reporting way

(Hatton & Smith, 1995). He never justified in any great detail in his journal the use of active learning as a pedagogical choice, and because justifications were absent, almost never analyzed the assumptions and beliefs informing them. While it *appears* that Marcus was engaging regularly in some level of reflection about his practice that culminated in generalizations about future practice, an understanding of the nature of that reflection is not possible from the journal record alone.

Part of the difficulty in discerning the level of reflective thinking operating in Marcus's journal may relate to one of the central features of Schon's (1987) theory. Unlike the prescriptive and conscious reflective thinking process assumed by Dewey (1933), Marcus's classroom behavior may have represented what Schon termed "knowledge-in-action": "The knowledge is inherent . . . in the action; it is based, in part, in the past experiences of the practitioner interacting with a particular situation. Interacting with a situation brings forth and expands upon a type of tacit knowledge in an individual that is not consciously articulated at the time" (Richardson, 1990, p.11).

Where can we look to more fully understand his thinking about active learning? From where did this tendency emerge? What influenced whether, when, how, and what he reflected upon? Evidence suggests that PSYC 991, Practicum and Seminar in the Teaching of Psychology, operated as the "reflective practicum" described by Schon (1987), an apprenticeship in which members are mentored by professionals who help them develop reflective habits

by engaging in "mutual dialogue that involves processes such as listening, telling, demonstrating, and imitating" (p. 46).

Three months prior to the fall semester, the third-year cohort met for six hours with Dr. Simpson. They discussed many issues, including elements of lecture and discussion and the construction of teaching units. Required summer reading included Robert J. Sternberg's (1997), *Teaching Introductory Psychology: Survival Tips From the Experts,* and Wilbert J. McKeachie's (1999), *Teaching Tips: Strategies, Research, and Theory for College and University Teachers.* Both texts discussed, and often endorsed, the use of active learning teaching strategies. Among the advice given in Sternberg (1997) was that teachers should stress active learning and critical thinking. Included were examples of activities experienced teachers had used successfully. Contributors explained the connection between these activities and the goals of a legitimate psychology course. Several chapters in the McKeachie text were devoted to the use and significance of active learning in the college classroom, including, "Problem-Based Learning" and "Teaching With Cases, Simulations, and Games." Though traditional lecturing was not dismissed, it was seen as less conducive to "problem solving, thinking, or attitude change" than activities which engaged students more fully (p. 67). The initial readings, then, sent a clear message about the value placed on active learning techniques by the program. However, as was demonstrated a few months later, the group was not expected to replicate without question the knowledge of external authorities.

Dr. Simpson may have been a critical early influence. During June, July and August, the cohort was required to draft three teaching modules on different units of study for their introductory psychology course. Those he submitted for Dr. Simpson's review contained frequent use of discussion, demonstration and other class activities. She offered revision suggestions and approved changes by the start of the fall semester, suggesting that Marcus's use of active learning techniques was condoned, perhaps expected.

The program apparently valued the use of these methods. Did Marcus design, use and reflect upon them simply because he was expected to? Was active learning never open to the criticism or modification that is the hallmark of reflective practice? (Hatton & Smith, 1995) Did the initial or primary impetus for this reflection arise from his participation in the teaching program, or were those factors merely two players in a more complex interchange of influences?

The new teaching situation Marcus found himself in may have significantly influenced how he thought about his teaching with active learning. As he anticipated his new role in a college classroom at the start of the fall semester, he revealed that he had some misgivings. "It's a challenge for me, just to be surrounded by four walls. I'm used to having a forest or having a ropes course. To not really have that is a little bit difficult for me." Beyond the physical differences of the teaching environment, Marcus noted that the large number of students and the content he was expected to teach demanded "a different type of teaching."

The locus of Marcus's discomfort may have rested in the assumptions he was just beginning to reframe in the light of his new classroom environment. Whenever his students were active and engaged, he expressed pleasure, implying a prescriptive assumption "about what we think ought to be happening in a particular situation"—that a good learning environment should encourage engagement (Brookfield, 1995, p. 3). Additionally, he may have assumed that, at some level, activities that contribute significantly to student engagement contributed to the deep processing of information. Beneath both assumptions may have been beliefs about the nature of learning itself. In any case, the "beliefs, commitments, conceptions, or perspectives about teaching" which teachers bring to the classroom may have originated in "life experiences which have influenced how they think about teaching" (Calderhead, 1989, p. 47). Sometimes called "personal theory," the pre-exiting views of teaching that the new practitioner brings to the classroom are often implicit, and, unless openly challenged, are so pervasive as to render ineffectual attempts to change teacher practice (Berliner, 1987; Calderhead, 1987; Ely, 1991; Tann, 1993; Zeichner, Tabachnick, & Densmore,1987).

Marcus's life included years of teaching experiential-based outdoor education, and he brought to his college role tacit knowledge about the successful use of active learning. This "passionate belief" in experiential learning, what LaBoskey (1995) described as a strongly held belief or value, may have influenced both the content and process of his reflection. This is not to say, however, that Marcus's view of active learning was unqualified:

> I started to wonder what the transference was. You know, the people that came off of those experiences in a ropes course . . . and then, what would they necessarily take away from it? Three months from now, would they remember what happened? Or would it just be going out to have fun on a ropes course, and cruise thirty feet up for the day? But then to actually take what they learned from that day and apply it to their real life. I started to wonder whether that stuff was working.

It is likely, then, that Marcus's readiness to use and reflect upon active learning was something he brought to, rather than discovered in, the graduate program, though the content and processes of reflection were contextualized anew. This context presented Marcus with an indeterminate situation, a question about how he could design experiential learning to meet the realities of a college classroom. On his fall syllabus, he delineated as a course objective the ability to "apply psychological theories and concepts to modern day situations," indicating that his use of active learning was linked to the value he held about the application of knowledge—the very question he had earlier about the transference value of experiential activities. How could he adapt what he knew about active learning to this new environment? Three weeks into the semester, he was already discovering how: "I realize that I don't have to give up as much as I thought I had to give up. I can still make this very demonstration heavy or I can make it very discussion heavy."

Past experiences and beliefs, as well as his new teaching situation, were likely contributors to Marcus's reflection on active learning. Operating within a number of structured interactions in the seminar group, Marcus was also in a position to be socialized to view active learning, and the practice of reflecting about it, in particular ways. The dialogic thinking that was modeled and practiced

under the direction of Dr. Simpson may have been a significant reinforcement of Marcus's reflective process.

Each seminar meeting of the fall semester was organized around required readings in pedagogical practice and theory. The "assigned" nature of these tasks communicated that, for example, class discussion, and reflection about it, were valued by the program. Dr. Simpson not only required the readings, she emerged as a significant influence in how those issues were reflected upon. As such, she was instrumental in making visible certain assumptions, beliefs and values about teaching, whether experienced or anticipated. That is, she played a key role in making conscious the embedded knowledge of teaching practice as it was envisioned in that environment.

During the course of the seminar meetings, Dr. Simpson conveyed both explicit and implicit expectations about teaching and their thinking about it. By inviting them to examine teaching experiences, experiences as students, and their understandings of the readings, she communicated that all three were valid sources from which the group could "mine" beliefs, values and assumptions. Her role in Marcus's reflection illustrated the significant role social context makes in learning (Brockbank & McGill, 2006). She began the conversation about using discussion with prescriptions. Teaching activity must always relate to course goals, a mandate that had been voiced several times in course readings. Do not use active learning simply because it is a popular technique. Judge your comfort in using it.

When Marcus said that he had used discussion successfully in some circumstances, but had questions about its universal use, he mirrored Dr. Simpson's frequent demonstration of "reconstructive" reflective thought, her continual framing and reframing of the teaching issue. What's going on here and what is my appropriate action, given what I know, believe, value and assume? That is, the thinking process was based upon a dialogic relationship between the context of the situation and the tacit teaching knowledge of the practitioner (Grimmett, MacKinnon, Erickson & Riecken, 1990). Reframing "describes the familiar process in which an event over which we have puzzled for some time suddenly is 'seen' differently and in a way that suggests new approaches to the puzzle. The significance of reframing is that it sets the puzzle differently" (Munby, & Russell, 1990, p. 116).

Though active learning was a topic worthy of discussion, and though its use had been encouraged in various ways, Dr. Simpson communicated that every teaching behavior should be the result of deliberation. She modeled a process of reflective thought by inviting the group to express and justify competing beliefs about the use of discussion. In a subsequent seminar, she reiterated the need for a particular kind of deliberation by asking, "If you're going to do active learning, you want to do it effectively. But what do you have to do to make that happen?" The message: Active learning was a "qualified, not a "best," practice. Justification for its use was dependent upon analysis that considered the idiosyncratic nature of the teaching situation (Loughran, 1996; Zeichner and Liston, 1987).

The "thinking out loud" demonstrated by Dr. Simpson followed the trajectory typical of all of the many descriptions of the process of reflective thought (Loughran, 1996). Consistently, she framed the teaching issues introduced in the seminar as "teaching dilemmas," and managed a process of reflective thinking to help the group analyze and justify future teaching action. Rather than treat information from readings as unquestionable, she framed the topics of discussions as ill-defined problems *requiring* deliberation. How should a teaching situation be viewed? What were the advantages of active learning? What were the disadvantages of discussion groups? What were the implications of an action? Framing information as questions "problematized" the relationship between the explicit knowledge group members had read about and the tacit knowledge they had as teachers and students. Seminar participants were expected to use their classroom experience to inform their analysis, and, in so doing, they had an opportunity to make explicit the assumptions and beliefs that informed their teaching (Dewey, 1933).

Not only did Dr. Simpson model Dewey's (1933) general protocol of reflective thought--what kinds of questions should be asked--she modeled the appropriate depth of analysis. Marcus was appalled when some students, in a class Dr. Simpson observed, advocated the use of alcohol as an aid to writing. Rather than simply agreeing that the remarks were inappropriate, she encouraged Marcus to think about ways to turn these kinds of situations into opportunities for students to think critically. In the seminar, she was not satisfied merely to list the advantages of group discussions. Instead, she asked seminar

members to analyze the factors that made them effective. When Stacey and Julia said that an advantage of discussion was that it moved the focus from the teacher to the learner, she challenged them to justify that result, inviting the group to engage in a level of discourse in which justifications for action were assessed by uncovering the assumptions that grounded them (Grimmett, MacKinnon, Erickson, & Rieckon, 1990; Zeichner and Liston, 1987). Marcus readily justified his use of discussion by articulating its relationship with his course goals. In approval, Dr. Simpson expressed a causal assumption about the connection between active learning and deep processing that the group had been exposed to several times before in the readings. Framing the issue as a choice between teacher- or student-centered learning, she unpacked the resistance new teachers might have in moving from the relative security of an organized lecture to the uncertainty of student-originated talk.

Throughout the semester, Marcus mirrored the reflective process of Dr. Simpson, although the group had never been assigned any readings articulating steps in reflective thought. He had not yet used the technique of providing discussion questions to students, but visualized the possibility, then offered a justification for the practice: it might benefit student learning. Next, he unpacked—as a warrant for the justification--the belief that the developmental level of students corresponded with their ability to learn through discussion. Then, he listed negative implications of the practice, followed by a possible teaching action which took everything he had just unearthed into consideration, acknowledging, as a final justification, his assumption that knowledge was

individually constructed. As detailed as the analysis was, Marcus never supposed that his solution was a certain answer. Instead, he accepted the uncertainly of knowledge and the idiosyncratic nature of circumstances, while deciding upon a justifiable action based upon a comparative review of options.

Like Dr. Simpson, Marcus consistently described as complex questions about the use of active learning techniques. This was no where more apparent than in his response to the question about using discussion in the psychobiology topics of the course. Christian framed the issue as a simple problem, one with an obvious solution: It was not possible. In contrast, Marcus rejected the notion of a single correct, albeit negative, answer. His solution was presented as a justified reaction to the problem, but not the *only* one, and certainly not one without its own limitations, indicating his attention to the complex interplay of assumptions, beliefs and realities that marked his use of active learning.

During the seminar discussions, Marcus consistently demonstrated his ability to reflect about active learning at a "reconstructive" level (Gimmett, MacKinnon, Erickson, & Rieckon, 1990). Rather than solve Julia's particular problem about the use of study groups in her class, he reported on how he had used groups in his, at once justifying their use in his particular situation and articulating potential limitations. Responding to Christian's statement that the water gun demonstration had inherent flaws, Marcus did not defend its use in all situations, but hypothesized about the factors that might contribute to its failure. Describing a possible use of class discussion for fact-based topics of the course, Marcus also mentioned a negative implication. The issue, the time in the

semester when it presented itself, the makeup of the class—all these were factors that Marcus considered as he proposed and justified teaching actions in response to felt problems. He valued active learning and had used it successfully, both in the past and in his current classroom. Nevertheless, he always reflected upon the propriety of its application.

The reflection Marcus engaged in seemed to be influenced by a complex interplay of factors, including his previous teaching experience; his own values and beliefs; theoretical knowledge gained from the program; expert advice from the supervising faculty; and his situation in the college classroom. Reflection was routine but mindful, a reconstruction of personal knowledge characterized, as Dewey (1933) suggested, by an active consideration of beliefs in the light of the consequences of action. "It is not the thing done but the quality of mind that goes into the doing" (p. 215). The seminar context elicited a complexity of reflective thought that was not revealed in his journal entries. As Loughran (1996) suggested,

> reflection may be influenced by the developmental situation itself, by factors within the individual, and by factors present within the larger environment. Thus, the reflective process appears most likely to be successful when both the individual and environmental factors are managed so that the context provides an appropriate balance of challenge and support. (pp. 43-44)

The Spring Semester

Narrative

At the request of Dr. Marcello, Marcus was required to make one "fundamental" change to his course for the spring, one which reflected his course

objectives. He decided to incorporate cross-cultural perspectives about the psychological topics of the course. Though this was his intention in the fall, he had not accomplished his goal. "I'd like to make it a little bit more specialized in terms of actually referencing more research from specific countries and specific cultures, as opposed to just saying, 'This is Western. This is Eastern.'" Though his spring syllabus made no mention of this, Marcus planned to include additional readings to meet this goal. Ultimately, he admitted by the end of the spring semester that he had been unsuccessful in carrying out his plan.

The "Course Description" and "Course Objectives" sections of his spring syllabus remained the same as the fall. The "Course Requirements" reflected a change from student debates to group presentations. Although Marcus retained most of the content topic areas of the previous semester, he changed the sequence and scope of many.

Because he was so busy, Marcus did not maintain a journal. "I'm just not good about reflecting, on a daily basis, what's going on in writing," although he said that it would have been beneficial.

The spring seminar was designed to focus less on pedagogical issues and more on the broader aspects of faculty life. In the first seminar after spring classes began, Dr. Marcello said that it was up to the group to determine the extent of discussion about daily teaching.

> It's *totally* up to you. However you want to do it. If I have a sense that we're beating you over the head to get something out of you, I'm just going to abandon it and stop, and we'll talk about the readings. But I *do* want to make sure you have an opportunity to talk about things. So, every week, you should come prepared to talk about things if you want to. Otherwise, we'll just move on.

Early in the semester, I observed a class where Marcus introduced brain structure. He began by projecting photographs of Richard Pryor and Muhammad Ali, and asked if anyone could identify them. Several students did. Marcus said they had been diagnosed with multiple sclerosis and Parkinson's disease, and asked the class what they knew about the conditions. Two students answered.

Without going into any more detail about the diseases, Marcus changed the screen image to project the term, "RUNNER'S HIGH." "Does anyone know what this is?" he asked. Three students briefly acknowledged that they had experienced the condition. Marcus asked clarifying questions, but did not give an extensive definition. Instead, he introduced the day's topics by asking several questions: "Why do you guys think we should study the parts of the brain?"; "How many neurons in the brain?"; "If you put your hand on a flame, what happens?"; "Why does a neuron fire?" Several students offered answers, and Marcus responded with clarifying questions.

Throughout the 50-minute class, Marcus asked at least 23 questions, and, in each case, several students offered responses. Some questions required students to recall material covered in text reading or previous classes; others prompted them to restate conclusions they had drawn just minutes before ("What did we just say about that?"). Sometimes, Marcus presented a hypothetical situation: If a runner comes to a river and must cross over it, "what would be easier—taking a boat across or running through it?" Imagine you are at a sixth-grade dance where the girls are lined against one wall and the boys on the other ("You've all been there"). In what way was that similar to neuron action, he

asked. At least five times, he checked to see if students understood: "Make sense to you guys?"; "What did you guys learn?"

Marcus's Power Point slides contained short bullets of text, often accompanied by photographs and diagrams, and, in one case, a short video clip. He did not read from the screen or use the same vocabulary; rather the text acted as speaking prompts. Questions and class talk were interspersed with two- or three-minute explanations of content material. As he spoke, Marcus walked slowly from side-to-side, front-to-back, maintaining continuous eye contact with all sections of the classroom. He was dressed in khaki pants and a casual shirt, and, while he maintained a vocal level loud enough for everyone to hear, he spoke with the inflection and some of the vocabulary of a peer ("you guys").

After 20 minutes of class discussion and lecturing, he asked the class to form a circle in order to demonstrate the process of nerve firing. Laughing and smiling, the students quickly complied. "Pretend you are a nerve, and you have to pass a signal to the next nerve," he said, and he asked students to squeeze the shoulder of the person in front of them after they had been squeezed by the person behind. Everyone participated. Using questions, Marcus guided the students to explain the process. For the remainder of the class, he referred to the activity when it was relevant.

Marcus's use of Power Point mirrored Dr. Marcello's advice a few days later in seminar when he suggested that slides should contain prompts for speaking, not lengthy text that was read by the instructor. Dr. Marcello said text-heavy slides might encourage students to copy down information rather than

think about it. Christian remarked that he did not quite understand. How would that contribute to passivity? Marcus used an analogy to explain Dr. Marcello's point. "There's a danger of them just seeing it as synonymous with watching TV or going to the movies, where they go into that zone. They're conditioned to not interact. When you go to the movies or watch TV, you're not interacting at all. Maybe they just flip that switch into non-interaction when they see a big screen in front of them and a text-dominated picture." He believed that teachers could send a message "early on" that their Power Point was not an invitation to sit back. "There's interaction involved." Dr. Marcello agreed. He suggested one way to emphasize the point Marcus made was to blank out the Power Point screen occasionally.

> Blank it out and we're back to [Marcus] again. This is me. This is you. We're having a discussion. It's not all about Power Point. It's about using it discretely, judiciously, rather than, as you say, putting on a show, putting on a movie and having them going to that zone. That's what creates the passive behavior.

Responding in one seminar to Dr. Marcello's question, "What else is new?" Marcus said that he had a "borderline problem child," a student who seemed to have an inappropriate sense of when to speak up, someone who, Marcus said, "doesn't really know when to be quiet." Dr. Marcello asked Marcus to give some examples of the student's behavior. When he did, Dr. Marcello asked whether the student contributed in positive ways to the class. When Marcus said yes, Dr. Marcello advised: "So that's the challenge in this case, to select the wheat from the chaff. If you had someone who was truly disruptive, that would be almost easier. Just take him aside and say, 'Cool it.'" Marcus, in a low voice, said he had

tried to be "non-confrontational" about it in class. "That's a good idea," said Dr. Marcello, and then asked if Marcus had thought about what to say to the student.

> Marcus: I thought about . . . I thought about, like, the passive approach, which would be getting some complaints from other students that you're being disruptive. I don't want to short change them, their experience in this class.
> Dr. Marcello: Hm . . . mmm [nodding].
> Marcus: Or the more direct approach, which is, "You're annoying me [laughing], and I think you're being disruptive to the class.
> Dr. Marcello: Yeah.
> Marcus: Yeah. I don't know which one of those . . .
> Dr. Marcello: Right. But it's . . .
> Marcus: I'm obviously not saying "You're *annoying* me," but . . .
> Dr. Marcello: Yeah. "Distracting." Yeah.

Marcus explained that he had "a whole piece on respect" in his syllabus, and thought he might remind the student that this "was part of the contract he agreed to in taking this course." Dr. Marcello did not advise Marcus on what to say to the student. Instead, he suggested that, when he talked with him, he sandwich whatever criticisms he had with praise. He did not want to send the message that the student had nothing to contribute to the class. When Julia suggested that Marcus might give the student an example of how he wanted him to act, Dr. Marcello said, "Yeah. Yeah. The more *specific* you can be like that. Yeah."

One day, Marcus opened his class by summarizing what students had written about the class a few days before. Many thought the "experiential" aspects of course helped their learning, and Marcus explained that the reason he used them was to relate to different learning preferences. Only about half the class felt the Jeopardy review session was helpful, he said, and he wondered if it

had to do with the format of the game, as only a few students were able to get involved. Next time, he told them, he would "find a different approach."

The opening Power Point slide contained a brief outline of the class topics. He asked students to copy it and leave blank spaces that they could fill in during the class. He then held up a red baseball cap, asking several students what color it was. "Are you sure?" Everyone looked at Marcus. "What if I can't see the hat?" "Is it still red?" Not answering the question, he continued, "This is one of the questions we'll cover." The class, he explained, focused on questions related to the visual system. During the class, he said, they would "come up with answers."

Throughout the class, Marcus used a variety of graphics and photographs to introduce questions about the visual system. When he defined terms, he waited for students to take notes. Most often he introduced new ideas with questions, "What does the eye do? How are we able to see?" engaging students in brief discussions. To illustrate the concept of the eye's blind spot, he conducted a demonstration with a volunteer student at the front of the room, and then asked the class, "Why did she have trouble seeing this pen? What do you know about peripheral vision?" During the discussion, Marcus interjected a few minutes of explanation about the function of rods and cones.

Midpoint in the class, he again held out the red cap. "What is happening in the process to make this look red?" This prompted a discussion about the psychological nature of color perception. Some students asked questions about the process that Marcus was able to answer. However, when one student asked whether different people could perceive red as green, Marcus paused. "I wouldn't

worry about philosophical questions." Throughout the class, every student looked at Marcus or the screen, and took notes when he directed them to.

"Anything happen in class this week worth discussing?" Dr. Marcello asked the next week. Concerned about how her students were doing, Stacey said she had written on some of their tests, "You should come see me about this." No one had. Marcus responded, at first tentatively, and then with a louder voice:

> I don't know how much effort you want to put into it. I've emailed students before, and was real careful about how I framed the language as, you know, "I'm concerned about how you did in your last exam. Let's work together and get these grades up. I think we can come up with a plan, or some study guides." I've found that if I framed it as "we," versus, "You need to do this," "You need to do that," they were more willing to meet with me. By showing them that I was sending them specifically an email which showed a little bit more effort on my part, as opposed to just writing on their quiz, they responded to my emails and wanted to meet. I don't know. . . . It *seemed*, they seemed . . . respond to it. . . . I felt like it was a good way I could address them.

Dr. Marcello agreed, saying that it was a good idea to see the issue from the student's perspective. "I think those are good suggestions."

The group continued to talk about frustrating or puzzling student behaviors, and Dr. Marcello asked Marcus to explain a recent incident. The publisher of the textbook Marcus was using contacted Dr. Marcello. Apparently, one of Marcus's students had attempted to get an instructor's copy. Dr. Marcello explained his "immediate reaction." Over the years, he said, he had learned never to jump to unwarranted conclusions, so he did not assume the student had unscrupulous intentions of getting a text book complete with instructor test banks. Perhaps he simply could not afford a text, and had asked Marcus what to do. Not knowing any different, perhaps Marcus had advised he seek a desk copy from

the publisher. "Maybe it was perfectly innocent," he said. When they had talked privately about the incident, Dr. Marcello told Marcus that he should speak with the student, but "how you want to talk with him and what you want to talk to him about is up to you." The student explained to Marcus that he thought he was just ordering the book online, but Marcus indicated to the seminar that he questioned his honesty, as the request form the student completed clearly indicated it was for instructor use. Marcus said:

> You can either assume that he didn't know what he was doing. The second branch is, he *did* know what he was doing. But there's two branches of that. He knew what he was doing and he was just trying to get a free book. *Or* he knew what he was doing and he was trying to get a free book with the test bank, with those resources. . . . .
>
> I don't know. I mean. I don't, because it's really hard to know what someone's intent is besides taking them by their word. It was a little disheartening for me because I went through a fair amount of effort to put the book on reserve. Ultimately, you just don't know. You have to kind of take him at his word.

Dr. Marcello agreed, but then asked the group to think about what they had learned from Marcus's experience. Students may not want to disclose that they cannot afford the text, so putting one on library reserve was advisable. It was possible, however, that the student had engaged in intentional misconduct, so he would contact the associate dean about the case. Remember, he said, "Wherever you go, you'll find that your deans will generally be helpful about such things."

In the fifth seminar session, Dr. Marcello invited the group to share some of the activities they had used or planned to use. "What are you going to be doing for sensation and perception? What did you do in consciousness? Did you talk about sleep? Did you talk about drugs? Did you talk about both? Or, how did you

decide to talk about that? Did you have any demonstrations or activities in class?" Stacey began by asking about a demonstration for sensation and perception. Dr. Marcello explained at length an activity that he had used in one of his classes. "That will be very interesting to them." He spoke for a few minutes about how the eye functions.

When he asked if anyone else had ideas about effective demonstrations, Marcus described an activity in a recent class that his students had enjoyed. For the unit on drugs and alcohol, he intended to assign readings to student groups, and then require each to present their findings to the class. That would be followed, he said, by a showing of *Spin The Bottle,* a film on campus alcohol use. "I think it's a good chapter to really relate to them and their lives." "Exactly. Yeah," responded Dr. Marcello. Marcus continued by saying that his goal was to "make it as applied as possible for them." Last semester, he said, students had voiced some disturbing opinions about the use of alcohol when writing papers. "I got some really outlandish answers":

> I was kind of floored last semester. That was the class that [Dr. Simpson] actually observed, so I had a good meeting with her. And kind of . . . knowing how to, having some more data to back up some things, some of these questions that I come in with. So, if I *do* get these, like, crazy answers, then I can at least present them with, not just to say, "Okay. That's wrong. You shouldn't do that." But to say, "Well. Research has shown that, you know, alcohol can impair cognitive functioning in this capacity." You never really know what kind of answers they're going to come up with.

Dr. Marcello said this was a good example of how the cohort would develop, over time, a more substantial knowledge base. Experience would make them more and more able to respond appropriately to classroom situations like

the one Marcus had encountered. "You have to do *this* much research," he said, raising his hand, "to be prepared for this type of thing happening. It just comes with time. Every year, you do more and more reading."

For the class day focused on conditioning, Marcus arranged for a graduate student doing research with pigeons to bring one to class. He explained that the demonstration would help the class understand the concept of operant conditioning, and he first invited the graduate student, Taylor, to explain the purposes of his experimental research with birds.

As the class worked with Taylor to shape the bird's behavior, Marcus stood at the front of the room and asked occasional questions: "Have you ever used sound to shape the bird's behavior?" After Taylor and the bird left, Marcus said that he hoped the demonstration helped clarify the concept of operant conditioning and gave the class some insight into animal research. "I hope you come up with some types of conclusions about how ethical you think it is."

A few weeks into the semester, Marcus met with Dr. Marcello to review a videotape of one of his classes in which he had done some demonstrations. Dr. Marcello suggested a more effective demonstration than the one he had chosen on classical conditioning. In a subsequent interview, Marcus said: "He said that he thought I did a good job. The examples I picked were really clear." Although Marcus felt that he and Dr. Marcello held "different philosophies" about teaching, "there's still a lot of things I can learn from him. He's been doing it for a long time."

A week before mid-semester, Marcus brought a problem to the seminar. About one-third of his students submitted research papers without citations, though he had explained the requirement more than once and distributed a handout explaining the use of APA. With a surprised look on his face, he asked the group, "How many times can I tell them?" He decided to allow students to revise their papers, but not everyone had. He was not sure what to do about it. Dr. Marcello asked whether he had the problem the previous semester, what hypotheses he had about the cause of the behavior, and what lesson he took away from the experience. Marcus described in more detail how he had explained the use of citations and emailed students to remind them to revise. "There's only so much I can do," he said. "That's where I'm kind of dumbfounded, because I don't know how else to communicate to them besides through class and through email. I don't know what else to do."

In a small voice, Julia said that she had a thought, just a "speculation." Besides an explanation, perhaps students would benefit from something more concrete. "Maybe spend two extra minutes showing them how you might cite something in-text, like, from a book, just so they can see, because, perhaps, it's too disconnected." Marcus said he had thought about giving an example, but decided not to because "their textbook's full of them." Yes, said Dr. Marcello, but students might not recognize the link between their own papers and the text. "What Julia's saying is to give a model, even if it's just a short model. A one-page fictitious paper by [Marcus].They might not make the connection [with] the textbook, as odd as it might sound." As well, Dr. Marcello advised that Marcus

attach a consequence to their behavior, a lesson "they can carry outside of the course for their next courses." Marcus brightened and said, "Yeah. I'm definitely going to."

Marcus's mid-semester student evaluations revealed that 90% strongly agreed he had encouraged discussion questions. The comments about active learning techniques included: "I like in class experiments." "Fun discussions and activities!" "Not too much lecture." "[Marcus] really gives out the info enthusiastically and encourages discussion and class involvement." "The demonstrations are helpful." "Keep up in class experiments." Marcus said he was "surprised" at his students' reactions, saying that he thought they would be much more negative. On the other hand, he realized that student evaluations were not always accurate assessments.

> I kind of have a jaded opinion now about these evaluations, because mine have been fairly high. [This] is my first year teaching. I know there's tons more things that I could be doing. If I were to just look at my evaluations, I'd be, like, "Oh, no. Things are going great. There's nothing I can work on." I wonder how valuable they are really.

Around mid-semester, Dr. Marcello met with Marcus to review his class observation. One suggestion was that Marcus think about ways to give students more positive feedback when they responded to his questions. Dr. Marcello could teach him a lot, said Marcus, although he did not entirely agree with his advice. An incorrect student answer placed Marcus in a quandary. On the one hand, his students were not "first graders. They can take it if I tell them what they're saying isn't right." On the other, "You don't want to shut people off. It's probably the way in which you tell them that their answer isn't the answer that you were looking for,

as to whether or not they're going to shut down or respond again." He was surprised by Dr. Marcello's comment because he worked to maintain respect for his students. "Maybe there are times when I could be more encouraging to them."

Dressed in corduroy pants and sweater, Marcus began class one day by describing how students had responded to questions about their level of understanding relative to recent course material. "A lot of you asked about moral dilemmas," he said, "which is good, because that's what we're going to be talking about today." He quickly outlined the day's agenda: a brief overview of Kohlberg, followed by group work on moral dilemmas.

He asked the class to read a story, titled the "Heinz Dilemma," projected on the front screen. After a few minutes, he asked, "What do you guys think? Should he steal the drug?" Several students raised their hands high into the air. Rather than call on them, Marcus said that the day's class focus was on not *how* people would answer this question, but *why.* He then allowed a few minutes for students to explain and justify their answers, without offering his own opinion.

Different opinions about the morality of behavior, he said, was the basis for stage theories of moral development, the topic of the most recent text reading assignment. He reminded the class of Piaget's theory, discussed in the previous class, and asked students to think about what they had identified as limitations of stage theory. For the next few minutes, he alternately presented ideas on levels of moral development and asked whether students understood.

Moving his eyes from right to left across the class, Marcus asked what the dangers of "post-conventional thinking" might be. "Couldn't anything really be justified, within your own moral ethics?" To illustrate, he asked the class whether suicide bombers were acting within a moral frame. At first, everyone was silent. When a woman said, in a low voice, that suicide bombers were acting according to religious dictates, not those of law, he repeated her answer and asked the class to relate this example to the "original question" about whether the man in the Heinz dilemma should steal the drug.

When no one responded, Marcus paused, and then described a hypothetical moral dilemma about a college student who had the opportunity to cheat on a test. When he asked students what they would do, many responded, both to Marcus and to classmates with whom they disagreed. Several times, Marcus asked them to justify their conclusions, but never indicated a preference for one answer over another. In one case, he looked at a student and said, "You've been talking more about whether or not you get caught. What if you don't get caught? Is it justified?"

"What are you guys noticing about most of the answers that we're hearing from both sides? What level of reasoning are we thinking of here?" Two students answered immediately. "Right," Marcus responded. "One's a little bit more immediate, and one's a little bit more future oriented." So what level of reasoning is demonstrated by those who would not cheat because they felt it was wrong? Three students answered immediately. When they did, Marcus asked, "Conventional? Why?" He asked students with different answers to justify their

conclusion. Before he moved on to Kohlberg, Marcus asked, "Do those levels make sense to you guys? The differences?" He looked around the class. Many students nodded.

Another round of questions and answers erupted when Marcus asked the class to focus on criticisms of Kohlberg's moral theory. Although only about a third of the class actually spoke, every student was attending to the speakers and to Marcus. He then read a passage explaining Chinese conceptions of morality. The passage contained no examples or illustrations. When Marcus asked the class whether this notion represented a "higher level" of moral reasoning, no one answered. Marcus waited for about five seconds. "What do you guys think?" He waited. "What do they value in China?" One student answered in a low voice, and then Marcus answered his own question.

To end the class, Marcus asked students to count off in sixes and gather in groups. He gave each a moral dilemma to read and discuss. As they did, he walked from group to group, offering comments and questions. During the ten-minute activity, most group members were talking with one another.

In an interview a little after mid-semester, Marcus said that class was going well. He noticed that the class dynamic differed from the fall semester, in that small pockets of students were more talkative. "That's good in terms of discussion. I feel like I get more responses."

Teaching was always on his mind, he said. He rarely spoke about teaching, outside of the seminar, with Christian, Julia and Stacey. Listening to and discussing teaching issues in seminar, however, was the "most valuable

part" of the weekly gatherings, where he often discovered new perspectives from which to view his teaching. Christian had taught him "commitment and dedication." From Julia, he learned about "compassion." Stacey had taught him to "take risks." "Without the seminar, my teaching would probably be more one-dimensional. I would have probably just tried to transfer a lot of what I knew from other environments into this teaching environment. I wouldn't have been exposed to all this literature on teaching."

Dr. Simpson and Dr. Marcello had been "huge" influences on his development as a teacher. He had "great conversations about facilitating in-class discussions" with Dr. Simpson. Of her assistance he said, "It was good to get her feedback. When something bad happens, it's good to have someone there." Although he did not always agree with Dr. Marcello's "style, technique," Marcus felt he had helped him "clarify his "teaching values."

Outside of the seminar discussions, what happened in the classroom was the prompt for him to think about his teaching. Sometimes he would "just have a feeling. After I leave class. I'll be like, 'Wow. That went really well. The kids seemed interested. They were asking questions. They seemed engaged.' So maybe *that's* partly how I monitor. How excited about they seem about the topic or the class." Occasionally, he realized' "while I'm in class," that he could be doing a better job.

A significant issue for him was his "internal conflict" about assessing students. "Coming up with what I perceive to be valuable ways to evaluate students. Not necessarily giving them a grade, but having a sense of, what's the

process that they are going through?" He was not particularly concerned about how much course information his students retained. What he was concerned about was building an environment where their "analytical thinking, deeper processing skills, presentation skills" would be encouraged. Unlike test knowledge, those skills could not be measured. "The educational process is not always like, you teach, they take the test, they do well, and then they're learning. I think that could be a component of it, but I don't think that's the end-all/be-all for a way you can evaluate a student's progress in a course."

Gauging understanding by observing student behaviors or facial expressions was not consistently useful, he said, as a number of factors, like especially vocal or quiet students, contributed to the demeanor of a class on any given day. One strategy that he did use to enliven students, however, was questioning, saying he realized the power of a question to spark student engagement. "I can tell things are going well in class when people are excited and engaged and asking questions." His questions were usually not designed to test student retention; rather, they were designed to encourage critical thinking and application of course material. "A lot of them are usually opinion or experience-oriented." For example, he had asked students, in a class on defense mechanisms, to think about times when they had used them in their lives. Allowing students to engage in course material by seeing it through the filter of their own experience was important. At first, giving their own examples was "affirming" to them that they had something to offer. Once they understood the concept a little better, he said, they could decide on their own whether their

experiences met the criteria of the mechanism. Marcus was not positioned to tell them they were wrong or right; they discovered this on their own. His role was to create the environment where that discovery could be made.

Using questions meant, he realized, that he could not, ultimately, control discussion, or anticipate what students would say. Dr. Simpson had reminded him in the fall that "the more you do it, the more comments you'll see come up, so you can just do the research about those topics, and be able to provide them with research."

Of all the influences on his practice, the most valuable was the act of teaching itself, Marcus said. Subsequent courses on pedagogy would probably not be as useful as more teaching. "I am going to learn now just by teaching and trying new things in my classes, and maybe having someone to talk [to]. For me, being an experiential learner, that's how I learn the best."

Despite the confidence he had gained after more than a semester-and-a-half in the classroom, the discomfort he began with in the fall remained:

> My biggest struggle is how much I can incorporate more experiential things into a classroom with 50 or 60 students. Taking away lecture. Taking away Power Point. Taking away tests. How can I do that within the setting that I'm in? It's still something that I'm at odds with. So much of what I'm used to is being outside with the kids. I think there's great value in being able to do experiential stuff. *That's* the struggle that I have.

These feelings, he said, were balanced somewhat by his growing belief that he could become a successful educator. He felt "good" when his students were excited about something, and he was in a position to "point them in the direction

of something that they could be excited about." His enthusiasm was sparked by theirs, "when their eyes are open to things that they never knew about."

On a snowy morning two-thirds into the semester, Marcus began class by asking what the weather forecast was for the weekend. He then explained that students would meet in their assigned groups to begin planning their final presentations, exchange emails, and "think about times you want to meet." Reviewing the details of the presentation, Marcus explained that "a big part of this is to give you guys some practice in public speaking, which I think is really important." In lieu of a final exam, the group presentations, he said, would

> provide you guys the opportunity to incorporate materials from class, practice public speaking, work as part of a team, discuss important social issues. This is your final. Take it seriously. This is a way in which I think you can apply everything that we've learned in class, everything that you've read. Take and apply it to the real world. It's an opportunity for you guys to not only learn from the people who are presenting, but also it gives them some feedback.

Students would determine the final plan of the presentation, but he could be a resource. He reviewed several considerations they should keep in mind, including clarity of explanation and connection to psychology.

He then held up a copy of *TIME* magazine and said that it was "amazing" that so many of the topics they had covered in class could be found in the issue. "All stuff that's very relevant to things we've been doing." View assigned topics, he said, from different cultural perspectives. "How is this issue playing out in Japan, in China, in England, in France?" The most important thing they should do? "Be creative," Marcus said, and he explained that they could use video clips, posters, and Power Point, and could interview experts.

After fielding questions about the details of the presentations, Marcus divided the class into groups, according to topics they had indicated a preference for: eating disorders, aggression, repressed memories, ADHD, psychological disorders, ESP, stereotypes, marijuana, intelligence, attention. As the groups talked, Marcus walked around the room, offering advice and answering questions. One group was confused about the scope of the "intelligence" topic. Marcus showed them where they could look in the textbook to clarify. In one group, a student said, "Let's get on it. Let's not wait until the last minute." Another replied, "I can't go this Sunday. We have this test." Another group looked through the *TIME* magazine Marcus had just referred to.

Two weeks later, Dr. Marcello began the seminar discussion with, "What's new in the world of teaching?" After some discussion about frustrations when students did not complete course requirements, Dr. Marcello said that parenthood was a useful metaphor to use to describe teaching:

> You're the parent, and your students are your children. If you always, in every case, if you think of your student as your own child, if you treat every student like she or he is your own child, then you'll be a *little* more forgiving. Up to a point. Just like you have to be stern with your own children if they're screwing up. Cutting a little slack, a little bit. I just think that it makes a difference. I really think that makes a difference. I really do. It did for me.

This prompted Stacey to talk about the trouble she was having with her students. Although the semester was nearing an end, many of them had not fulfilled their obligations yet in a course service learning project. Marcus wondered if the experience of being required to work on a volunteer basis outside of the classroom was something they were not accustomed to. "In

another environment, that model would be something that students would be excited, very enthusiastic, about." The college classroom environment, he posited, might make what Stacey was asking them to do an "anomaly." They were probably shocked, he said, that she was asking them to do something beyond sitting and taking in information. "It's probably a very foreign concept to them." Dr. Marcello agreed, saying that the students might need "a lot more coaching early on."

As the discussion continued about student behavior, Marcus said that he was surprised at the low scores on his latest quiz. He believed this was a result of "asking some higher order essay questions, which I thought I was preparing them for throughout the semester. I was building up to it." When he asked his students about the quiz, they said "the essays came out of no where. We never talked about that in class." Marcus said he then did some "meta-teaching," explaining to his students that a central course goal was to develop critical thinking. While some students seemed to understand, and took him up on his offer to allow revisions, many students complained and did not revise. "Some of them just don't care," Marcus said, and he was frustrated. However, he said, "I'm not going to lose sleep over it."

Marcus felt strongly that his students needed to develop analysis skills in writing, so he told them that they should be prepared for subsequent quizzes that required a more sophisticated level of thought than they were used to. He told them, "I want you guys to be able to think critically, and that involves not just rehashing stuff you read in the book, and not just rehashing things I say in

lecture, but *using* some of the stuff that we're learning and being able to apply it." He admitted to the seminar group that when he was a beginning undergraduate, he, too, did not always appreciate teachers who requested what he was of his students.

As the seminar moved on, Marcus brought up an issue about a student who had missed a quiz. He told her she could make it up, and then discovered her absence was caused by a mandatory hearing of the university's judicial board. She had been charged with using alcohol in the dormitory. "I was kind of like, 'Wow,'" said Marcus. He wondered if, by allowing her to make up the quiz, he was endorsing "her wrong behavior," but he was concerned that he had already given his word that she could make up the quiz.

Dr. Marcello asked him to consider whether he was "prejudging," as he did not know the outcome of the hearing. Consider another possibility, he said—that some tragic family event had resulted in a lapse of judgment on the student's part. As he spoke, Marcus said, "Right. Right," "And it's not like she murdered someone." He was wondering, said Marcus, how much "parenting" he needed to do in this case. Rather than answer, Dr. Marcello asked the group, "Well, what would you do? How would you all react?" After some group discussion, Marcus decided that the best strategy was to have a missed quiz policy that would eliminate the "grey areas" like this. Dr. Marcello agreed this would be advisable.

At the end-of-semester "Fish Bowl" meeting with the next cohort of graduate student teachers, Marcus described how, the more classes he taught, the more confident he became. Another realization he had made was the

powerful influence of the textbook on framing what students regard as legitimate information. To mitigate some of this influence, he said, he designed discussions so that students would be exposed to different perspectives on course material. This, he hoped, would help them develop the critical thinking skills that were one of his major course goals. "Your textbook gives you this interpretation of using human subjects in research, or animals in research. Is it biased? Is it not biased? What are the things they're *not* looking at? What are the things that they're looking at? How are they presenting it?"

When he was asked whether some people should be discouraged from classroom teaching, Marcus gave a qualified answer. The only way to know, he said, was to try. Although "everyone starts at the bottom," he said, teaching can always be improved. Don't let lack of self-confidence deter you, he said. "You have this fear in the beginning that, if I screw up once or if I say something that was wrong, that I will totally lose all credibility. I didn't find that to be the case."

As a course requirement of PSYC 992, Marcus completed a teaching portfolio designed around the specifications outlined in *A Guide to the Teaching Portfolio*, developed by the UNH Graduate School and the Teaching Excellence Program (2003). Beyond a collection of course materials, the expectation was that the portfolio provide evidence of how the preparer taught and explain the reasons why. Marcus's portfolio contained statements of teaching philosophy, competency, and goals; samples of course syllabi, assignments and Power Point slides; a sample student paper, grading rubric, and Marcus's comments; sample quizzes; and fall and spring student course evaluations. "Building a teaching

community," Marcus said in his teaching philosophy, was his central goal. He described behaviors that contributed to that end: providing students with positive feedback when they spoke up in class and fostering respect for others. Marcus described his use of active learning in a lengthy paragraph:

> I practice active learning in the classroom. In my opinion, education is an interactive process. I try and act as a facilitator in the classroom by presenting concepts, ideas, and theories to students and guide them in their processing of this information. Through small and large group discussions, I encourage students to synthesize class information with personal experience. For example, I present students with opposing viewpoints on the ethical treatment of animals in research. While in small discussion groups I encourage them to establish their own personal morals, values, and beliefs. Although I check in on discussions and provide a basic framework, discussion sessions are lead by students. Student lead discussion groups are an extremely effective method of active learning that allows students an opportunity to engage in meaningful dialogue with their peers.

Evidence of his use of active learning was given in a list of 36 classroom activities, several for each unit of the course, that he had used in both of his classes. He valued the development of critical thinking skills, so he encouraged students to ask questions and used class discussions to analyze "many contentious issues." Ultimately, he aimed to "provide students with an engaging community that encourages active learning, critical thinking, and writing skills. My ultimate goal as a teacher is that students gain confidence in their ability to express their knowledge through writing and insightful dialogue."

To illustrate his teaching competency, Marcus described his lectures as "concise," and said that he "frequently use[d] experiential demonstrations to evoke student interest in course material." Each class was designed to incorporate several teaching methods, including lecture, small and large group

discussion, demonstrations, "experiential activities," and debate. This emphasis on active learning was repeated in his statement of teaching goals.

> I intend on strengthening the connection between experiential activities I use in the classroom and real world applications of psychology. I aspire to present all material in a multitude of ways, but want to focus on experiential methods. . . . I plan on achieving this goal by continually reading articles about experiential activities for psychology. Attending experiential education workshops, conferences, and seminars will also help me find new ways to incorporate hands-on activities into my teaching.

As his teaching year drew to a close, Marcus assessed his present and his future, saying that he wanted to be more "true" to himself:

> I feel more confident in teaching a college class, and feel less inclined to teach in a manner similar to everyone else. I am not going to give any more multiple-choice based tests. In addition, I am going to encourage more small group discussion, include more writing assignments, make my classes more applicable to real life issues, and cut down on the use of Power Point as a teaching tool.
>
> With a year of experience, I feel I am more confident and willing to try alternative approaches. I am less scared of failure. Also, I feel more connected to college age students. I have a better sense of what excites them and motivates them. Although the seminar was helpful, I learned the most from actually teaching. I am an experiential learner. The seminar was a good platform for discussing what happened in the classroom, but often the theory side of things seemed too abstract.

Analysis

Differences between the fall and spring semesters, and, perhaps, differences in Marcus himself, may have affected the way he reflected openly about active learning. No journal evidenced his thoughts, so there was less of an opportunity to observe his intrapersonal reflection (Brockbank & McGill, 2006). The seminar focused less on the daily issues of teaching, and Marcus spoke less frequently and in less detail. On the other hand, Marcus was required to develop a teaching portfolio that included a teaching philosophy, assessment of his

practice, and aspirations for future teaching. From his own accounts, Marcus made changes to the spring class based upon reflection about what occurred in the fall. Describing the student debates of the fall as less than successful; hypothesizing that cognitive development, his insufficient preparation of the groups, and competitive "noise" may have been contributing factors; and reiterating the goals of the activity—all of this indicated the change was the result of careful thought.

Class and seminar observations, interviews, course materials and Marcus's teaching portfolio reveal that he continued to reflect about active learning; however, his reflection in the spring seemed to indicate that he had begun to focus more often on the role that a communal class environment, and his relationship with students, played in its success.

In the seminar, Marcus did not offer as often or in as much detail the decision-making process he used to inform his active learning approach. As the second semester was designed to focus on wider issues of academic life, most of the required readings did not center on classroom pedagogy. Marcus and the others were assigned to read and lead discussion on topics like teaching statistics, professional development, non-traditional academic careers, the Greek system, college athletics, and promotion and tenure, and most of the seminar meetings were devoted to these issues. Discussion about issues relevant their current teaching occurred less than half the time of the fall seminar. Marcus spoke in seminar discussions about his teaching issues less than half the time he did in the fall seminar. Nevertheless, there was always an opportunity within each

session for participants to disclose what had been going on in their classrooms and seek the group's advice.

Though often in less detail, Marcus demonstrated that he was still reflecting about the use of active learning techniques. He not only described his use of demonstrations, for example, but reflected about their appropriate use. His re-visitation of the "problem" of uncomfortable student responses in a discussion about alcohol was evidence that, three months after its occurrence, he was still considering his response, analyzing teaching behaviors to discover the best way to encourage critical thinking about the issue. It seems that Marcus had a natural inclination to reflect; at the same time, the mentoring under Dr. Simpson in the fall semester may have contributed to what Boud and Walker (1998) refer to as "ritualized" acts of reflection, ways of thinking that are encouraged and regularly practiced and/or imposed.

Dr. Marcello's management style sometimes differed from Dr. Simpson's. He rarely used the term "teaching dilemma." Instead, he asked: "How's it going?" "What have you got to report?" "What else is new?" "Should we talk about this week's activities?" Unlike Dr. Simpson, Dr. Marcello did not always discuss teaching situations by modeling a protocol of description, assessment, hypotheses testing, action planning and justification, though he regularly asked Marcus to consider other perspectives about problems he brought up, engaging him in intentional reflective dialogue "at the edge of [his] knowledge, sense of self and the world" (Brockbank and McGill, 2006, p. 57). While the seminar as managed by Dr. Marcello differed from the fall semester, it continued to serve as

a forum for carefully managed dialogues where Marcus was encouraged and supported in reflective thinking (Edwards & Brunton, 1995).

As in the fall seminar, Marcus was prompted to talk about active learning in response to a fellow seminar member's problem. Reacting to Stacey's complaint, Marcus hypothesized that students' less than enthusiastic response to service learning originated from years of passivity in traditional schooling. He responded to Christian's puzzlement about the connection between Power Point and passive student behavior by creating an analogy that illustrated his reflection about the advantages and disadvantages of the use of technology, and offered a tentative solution.

Conditions for Active Learning. While he was able to analyze other people's dilemmas, he often struggled with issues of his own that centered around, not the *use* of active learning, but about the classroom environment that needed to be in place in order for it to occur. That is, it seemed essential for Marcus that he maintain a trusting relationship with students in order for him to create the communal atmosphere he stipulated as a course goal. The student who acted up in class created a dilemma. Should he chastise him and threaten the relationship, or should he ignore his behavior, thereby tacitly condoning disrespect for the rest of the class? In the case of the student who allegedly attempted to get an instructor's copy of the text, should he continue to trust someone who may have demonstrated that he was not trustworthy? If he maintained a helping relationship with the woman accused of impropriety by the university, would he be condoning unacceptable behavior? When his students apparently disregarded

his efforts to help them by ignoring the requirement to use citations, and then seemed to dismiss his offer to allow them to revise, Marcus expressed disappointment. After several weeks into the semester, had he failed to establish the relationship he wanted with his students?

That Marcus constructed his classes around Socratic dialogue was not surprising, given his knowledge of cognitive theory and his previous experiences as teacher and learner. Rather than stand in front of his class and tell them what he knew, Marcus created a dynamic interchange between what students already knew and the information he wanted them to learn. He introduced new ideas by asking students to examine their reactions to an object, an example, a hypothetical situation. Their responses became the text he worked with to connect students to new ways of thinking. When he held up the red baseball cap, for example, he simultaneously triggered his students' previous understandings about color and challenged them to justify those understandings. "Education," Marcus believed, "is an interactive process. I try and act as a facilitator in the classroom by presenting concepts, ideas, and theories to students and guide them in their processing of this information."

This belief was based upon a number of assumptions: his students would learn best (as he defined it) through active learning; they were both willing and capable of doing so; active learning could only occur in an environment where students and teacher shared mutual respect and trust; he could create such an environment. These causal, prescriptive and paradigmatic assumptions were based in Marcus's beliefs about how teaching affected learning and what "good"

teaching and learning should look like (Brookfield, 1995). As well, they represented fundamental beliefs he held about what both he and his students were able to do—beliefs that may have resisted analysis because they represented "basic structuring axioms" he held to be "objective renderings of reality" (Brookfield, 1995, p. 2). Once these assumptions were tested by the behaviors of his students, who did not always demonstrate a willingness or ability to exhibit the respect or enthusiasm he placed as preconditions for success for teaching through active learning, Marcus was dismayed. As he talked in the seminar, he revealed a level of indecisiveness not characteristic of other matters he reflected upon. It seemed that he was troubled by his inability to balance competing beliefs.

In order for this questioning method to work successfully, Marcus needed to create and monitor a trusting environment, one where students believed their response was valued and their persons respected. In return for their participation, Marcus would lead them to new understandings. The manner of his dress, his friendly demeanor, and his vigilance in making eye contact with as many students as he could, implied that Marcus saw himself as a learning partner operating in a community "built upon respect." The willingness of students to respond to Marcus's every request—from volunteering to act as demonstration subjects to justifying their conclusions about the morality of a behavior—indicated that Marcus regularly succeeded in creating this environment, and he continued to see those behaviors as confirming. However, because Marcus chose to move control away from the teacher and within the dynamic relationship of the

classroom, he created the conditions for an ongoing indeterminate classroom situation. The "dilemmas" he offered in seminar, then, were tied to his beliefs about who he was as a teacher.

CHAPTER VI

CHRISTIAN

Coming to the Third Year

As an undergraduate at the University of Maine, Christian moved from a major in computer science to psychology. Seeing few career options for a graduate with his degree, he applied to the Ph.D. program at UNH in 2003. An interest in optical illusions led Christian to a scholarship focus on the application of computer science to sensation and perception research.

Christian's decision to apply at UNH had nothing to do, he says, with the graduate teaching program. He was not only unaware of what UNH offered, but assumed that Ph.D. programs "automatically" taught students how to teach. In retrospect, he says his placement at UNH was fortunate. Once he realized the purposes of the teaching program, he saw it as an opportunity to "make up for the mistakes of all my past professors." Additionally, Christian was excited about being able to share a subject he really enjoyed with others.

Looking ahead, Christian sees himself at an institution that favors teaching over research, although he realizes that the culture of the environment will shape his professional role. Prior to teaching his first section of Introductory

Psychology in the fall of 2005, Christian served as a teaching assistant, where he regularly graded tests and papers for his advisor.

Throughout his first year of teaching, Christian often spoke of his new teaching identity as "the other side of the red pen." What once puzzled him as a student he now needed to understand. As a student, he wondered, "how I could give teachers what they want. What do teachers want? What am I expected to do? What do I have to know?" In his new teaching role, he now needed to understand "what the teacher was thinking." "Seeing how obvious it is when students don't know [is] fundamentally eye opening because I've never stood there before." At the start of the fall semester, he admitted to both looking forward to, and being afraid of, his new position.

Something he felt confident about, however, was his ability to give lectures, what he termed "presentations." Several times throughout his undergraduate and graduate career, he had been called upon to make formal oral presentations. They were "no problem. The question is, am I doing anything good for the students? Are they getting anything out of what I am saying?"

Several months before he entered his first class, Christian wrote an "Annotated Statement of Teaching Philosophy" as an assignment in a course on college teaching. He believed that learning occurs when what students already know is integrated with new information, referencing Barr and Tagg (1995) on the need for a paradigm shift from teacher- to learner-centered classrooms. He used the metaphor of construction to illustrate the many components that "go into a

building," saying "they can only be formed into a coherent whole through proper consideration of each component in relation to one another."

As the creator and manager of those components, he said, a teacher should be "the sort of person who you expect to know more than you, and you expect you can go to that person and get your questions answered, that the person cares to make sure that you understand the answer." In one respect, he said, the teacher could be seen as a "friend." He would listen to students and adapt his teaching accordingly.

He believed that learning was "personal, holistic, even active," and that "the role of the teacher follows naturally." He indicated that shifting the focus from the teacher to the learner, as suggested by Bonwell and Eison (1991), redefines the teacher. Moving from "a self-important lecturer giving out knowledge, to being a friend/mentor who wishes to shape the material around the listeners," this shift encouraged students to actively inquire about and analyze course content. This occurs, he said, within a trusting environment that is created by the teacher.

A central goal of his teaching was for students to move beyond "base memorization" and relate the information he conveyed about psychology to their own lives. This would result in a level of comfort where students would subsequently be able to "discuss, analyze and integrate new material"—a behavior he said that might not be comfortable for first-year students.

During his three years as a Ph.D. student, Christian took several courses in the Preparing Future Faculty Program. "I can see how these concepts are supposed to be applied. I'm trying as many different things as I possibly can,

because I'm trying to get the students involved." He intended to incorporate several "ideas from different sources." Course assignments would include prompts for students to see connections between their personal lives and psychology, a goal he felt was especially important. As well, he had learned that it was important to develop critical thinking in students, to encourage them to develop a critical stance to evaluate materials presented in class. In an introductory psychology class, students would be exposed to the findings of research. "By explaining the criticism, the students would necessarily have to demonstrate that they understood some of the researcher's points in the first place." He said he had seen this occur successfully in a statistics course.

"Even if" he used a lecture format, he said he would make certain there was "at least a certain minimum of student involvement." He intended to keep track of who spoke up in his class by noting individual participation on an attendance sheet, a behavior he hoped would provide both "an incentive to be involved and also help [me] get to know the students." An additional source of involvement would be class assessments conducted at the end of course units, probably "a written description of the muddiest and clearest points from the class and/or textbook," as well as a question students would answer about his own "performance."

Christian believed that his philosophy would evolve: "As I continue in this path, I hope to be able to refine these ideas to help students acquire the knowledge that is relevant and be eager to learn more."

The Fall Semester

Narrative

Christian's fall class contained 30, mostly first-year, students. His syllabus described three student goals: understand the meaning, function, and "misuse" of psychology; apply psychology to life; develop "skills and habits of studying, reading, interacting and so on that will be necessary for your future learning, both in psychology and elsewhere." Under, "Who's the Prof?" Christian wrote:

> There is no "Professor" in this section. But there is a teacher: me! Hello, I'm [Christian Smith] and I'm a graduate student in psychology. At the same time I'm teaching you, I hope you can help me become a better teacher. Feel free to talk with me after class or during my office hours about anything at all.

Because he believed that learning was a function of integrating new information with previous knowledge, he would make the course relevant to their lives, "so that you're not just memorizing stale facts." Information would be organized "so that the pieces are relevant *to each other.*" Besides course requirements, his syllabus listed university resources for disability services, counseling and sexual harassment.

He had already learned some "heartening" lessons, wrote Christian in the first entry of his journal. More students kept the study tips packet he distributed than kept the syllabus, suggesting "that even the people who are dropping the class may actually have been interested in real instruction on these topics. As such, it seems that my first attempt to help out students with study skills went well."

Class interaction that first day also went "well," as students demonstrated a willingness to talk, "and, perhaps, humor me with a little laughter at my weak jokes," and interacted with one another upon request. Students relinquished the floor when he resumed speaking "without my having to make it look like I was desperately going, 'Okay, please stop talking and listen to me now.'" He intended to "think up possible things to say while trying to keep a reign [sic] in the future, as it was rather close this time." At the same time, he realized he may have rushed while explaining the syllabus, noting that, next class, he would repeat critical points. Fifty minutes for a class period, he wrote, was not long.

When the seminar group met for the first time, they discussed a number of logistical matters. Stacey worried that her students would not understand the material in the opening chapter well enough to make much sense of her lecture. Christian suggested that her students should not have any problem because she had assigned them reading from the text. "They should have *something* to say. It should just click," he told Stacey.

Christian reported in his journal that students were "thankfully" taking notes when he began lecturing. When he finished his second class ten minutes early, he used the time to address student questions, but reminded himself to prepare several class activities, "things to fill in the time," for future classes. He was able to "fill" the 50 minutes in a subsequent class, "leaving out nothing" and managing to "fit in a great big chunk of commentary at the start that was a response to student feedback from the previous time." Student behavior was "heartening."

Students remained in their seats, "kept attentive, kept pen on notepaper and kept answering my questions right up until the end."

By the end of the second week, he wrote that he was more confident "handling" the pace of his presentation and the connections between its content and the text material. He came to this conclusion because an equal number of students reported they liked or disliked the class in a written assessment. The assessment had been useful because students wrote their reaction to specific aspects of the class. "It's good to have student participation in such things." He sensed that some students felt his material was disorganized, but concluded that was a result of his failure to provide an adequate "preview of how the class would go."

Although there was "minimal" student participation unless he specifically requested it, he wrote, this was his intention. It was too soon for students to have the comprehension necessary for class discussion.

He wrote that he was learning student names and attempting to make "small talk," a skill he said he needed to develop. If he was "lucky," he would "come up with good things to say" that would engage less talkative students. Some of his conversations with students "actual[ly] last longer than, 'I'm fine. Thank you.'" He noted, one day, that students were "willing to laugh at the occasional silly moment." Even better, he was learning to not resume his talking until the laughter subsided.

The question about "fitting in" course content was addressed again in his journal a few days later. Although he managed to "fit in properly" all of the

content, he ran out of time for student feedback. Nevertheless, he "even" got students to summarize class material, "and they were willing to do this right up until the end of our available period." He wrote at length about an issue that had arisen several times already:

> I'm still uncertain about how much content I should really try to fit into my following class presentations, given the time available. It was quite useful to have the open space at the end for student activities like summarizing the material on their own. Given that, it would seem that it would be just fine to focus on fewer points in class and leave more to the textbook. However, responding to student requests such as on helping explain the textbook further in class (which showed up on the feedback) would then take up even more of the limited time. In considering it all, I suppose I should accept that some students will get more out of reading and others will get more out of listening (which showed up, again, in student feedback), so I don't need to change my teaching style in that respect unless problems appear.

"Classes going okay?" asked Dr. Simpson in the second seminar session. Christian reported that he was "pleasantly surprised" when he told his class that he wanted to use the entire 50 minutes, and, rather than complain, they "all stayed, and they stayed quiet, and they actually answered my questions up until the very, very, very last end of class, which was *very* reassuring." On the other hand, he said, he was "struggling to make sure the material I've got to give them is any good," explaining that he wondered whether the organization of his lectures was clear to him but not to his students. "Some students seem to be rather confused." He had reviewed class materials to "see where I can make things more clear," and subsequently developed a Power Point slide with a brief outline of the class.

Had he considered distributing a printed outline to students, asked Dr. Simpson. He had, said Christian, but he felt it did not make "much sense," as an outline would preclude the need for note taking. "Then I wouldn't need to talk." Stacey countered that her students preferred a printed outline. Had he allowed sufficient time for students to copy the outline from the screen, asked Dr. Simpson. "If they're interested," he replied, "then, sure, they can easily have written down everything." It was likely, said Dr. Simpson, that his students presented with a number of learning styles. While a written outline might seem superfluous to him, she suggested, it could help students understand the larger context of the material, to "stay anchored to the things that you are saying."

"You don't need to sell me on that point," Christian responded quickly. He had provided students with general frameworks about topics. In fact, he used much the same wording on his syllabus, and it "irked" him that students were still getting confused. Remember, said Dr. Simpson, that you anticipate students' needs when you build exam questions. Do the same, she suggested, when you plan class materials. A good way to determine the cause of confusion, she said, was non-graded class assessments where students could explain what they did not understand. Speaking to the group, she said, "This is the tension in teaching. How do we reach all of the students some of the time?"

The assigned reading for the session was the use of class discussion. To begin, Dr. Simpson asked, "Are there cons to using discussion?" Christian was the first to respond. "Takes time," he said. No one responded to this remark. Then Dr. Simpson asked the group their thoughts on how to design class

discussions. While he had not yet used discussion, and was "trying to figure out some overall game plan in my head," Christian had asked his students several different types of questions—a behavior advised in the readings. As a "bit of luck," he said, he had been getting responses. However, using class discussion in an introductory class, where students had a thin knowledge base of the subject, seemed unwise to him. As well, many topics in the course simply did not lend themselves to discussion. Why, he wondered, did the readings emphasize the value of asking a variety of questions when a full class discussion was impossible to begin with. This had left him "confused" and "muddled."

Should we always define discussion as times when only the students, and not the teacher, were speaking, asked Dr. Simpson. That seemed to be what the readings had implied, said Christian. As well, he said, they gave the impression that "a good teacher these days should be trying to figure out how to incorporate full class discussions into class, to get at this lovely concept called 'active learning.'" This, however, contradicted what he had read in previous teaching courses. Discussion was not the only way to achieve active learning. Even when the teacher is "standing in front, in complete control and lecturing," active learning can be going on. "I'm a little confused about what the implications are for my teaching, if what they're telling me to do seems to be changing from one class that I take to another class that I take."

When he said that discussion was just not possible for topics like neurobiology, Marcus quietly objected by suggesting a discussion idea for that very topic. Not responding to Marcus, Christian said that he concluded he would

have to employ a "sampler approach," experimenting with different teaching methods for each chapter, though this raised a concern. His students were used to the particular way he taught the class. "And all of a sudden, the teacher's asking them to prepare to discuss stuff that they themselves feel they've never seen before in their lives. I don't want to just throw in a discussion and see if it works, because it requires more preparation than that. Given the complexity of other things [sighing], it's looking like that may happen."

Perhaps the readings expressed a bias in favor of using class discussion, said Dr. Simpson. Instead, teachers should employ "a whole series of tools," but always use them thoughtfully by determining their purpose relative to course goals. Depending on the learning goal, she said, lectures can be extremely effective. In large classes, they may even be the most appropriate teaching method. Even the readings, however, advocated the design of lectures that included active learning opportunities. One way to do that was to analyze the questions asked of students within lectures. Do not assume at this stage, she said, that you are expected to use a variety of teaching methods well. A more realistic approach for now was to begin reflecting upon the appropriateness of the method you chose. She gave several examples of how a teacher, even in a lecture class, could prompt students to think about material.

> You don't have some big old outline of ten questions that you want to use to guide the whole class in a discussion, but you *are* getting them to take the focus off of you for a few minutes, get them interacting with each other, give them some chance to increase their oral communication skills. And you're starting the process of socializing them that, in this class, they should *talk* and not just always be sitting there taking notes.

As the session went on, Dr. Simpson asked the group to share one thing they discovered in the readings about discussion that they would like to try. Christian sighed and said that he gave himself "a pat on the back" when he read about something he had done already. That is, he had asked his class to write down their thoughts before saying them out loud in class. "That's at least *something*!" he said.

Christian noted in his journal a second time that students seemed a little confused when he began his teaching unit. He concluded that this was likely due to his jump from Chapter One to Chapter Three. Perhaps they read the wrong chapter, he wrote. That would account for so few students responding to his questions. This problem would solve itself, he wrote. Students would begin reading the syllabus, and so be aware of reading assignments, because he had "politely mentioned" that they do so. Another possibility for confusion was that he was speaking too quickly and sometimes forgetting to repeat important ideas. He had believed students would ask him to repeat if he was going too quickly, but no one had. "I think I should not do that."

The second seminar session focused on exam construction. Christian said that, once he gave his first quiz, he was going to ask students to write down what they learned about their studying and what they now expected to see on future quizzes. It was "perfectly possible," he said in a high-pitched, sarcastic voice, that they might write, "Now I know to expect ambiguous questions." He said he was trying to figure out how to ask them to reveal "what they didn't' like" about

quizzes. Dr. Simpson suggested he might ask students to note on the quiz itself areas that were confusing to them.

Later in the discussion, Christian said he had been pondering one of the readings that suggested teachers begin the semester by asking easy questions on quizzes, and then make them progressively more difficult. If he were to do that, each quiz would contain increasingly more information from past classes, culminating in a "large, cumulative" final exam—one that students would be prepared for.

What reason would you have for doing this, asked Dr. Simpson, echoing advice she had given moments before. "How are [your] learning goals achieved by *not* doing a cumulative exam? What particular learning goals might be achieved by *doing* the cumulative exam?" Stacey said she was concerned that her students would not learn much from a cumulative final because all they would do is "cram." Perhaps, suggested Dr. Simpson, a large cumulative exam might encourage students to "sacrifice depth of studying."

The next several journal entries indicated that Christian believed some things were going well. His "best class to date" occurred when he tried "as many different types of presentation as possible," echoing the "sampler approach" idea he had mentioned in seminar. He asked students to pair up and summarize class material. He conducted a demonstration that they found "amusing," and gave a reading quiz that they seemed "interested' in. Students were "actually dredging up the necessary psychology material and putting it into their own words." The day he showed a video, students "laughed at all the right places," and, after the

video ended, some students were willing to discuss it. Christian said he was able to make "as many marks on my 'participation sheet' as any day."

Several concerns, however, dominated these entries. Students were increasingly reluctant to respond to his questions in class, something Christian termed "strange," as they had participated, when asked to, in the previous module. He concluded that the decreased response may have been due to reading the wrong chapter—something he attributed to failure to read the syllabus. He worried that he might have created a "permanent effect" of non-response by structuring the beginning of the course the way he did. To change this, he would ask students to bring texts to class. With texts in hand, he wrote, someone was bound to be able to answer his questions. Another concern was that, even though he had trimmed the material on biology and added information he felt they would find interesting, his students seemed "bored."

They were not taking notes in class on material he felt was important to grasp. This, he wrote, was "unfortunate, because I have already told them that things like the argument behind a scientific point (and arguments are things that I may only present verbally) are just as good to summarize as anything else." To change this, he would try to balance "verbal and written material more efficiently."

Another concern was that "almost nobody" had questions about the quiz when he returned it, and no one came to office hours. To address this, he decided to change tactics, he announced in the next seminar. He told students that they would not spend an entire class reviewing for his next quiz, even though some had expressed a desire to have one. Instead, he invited students to "come

by" his office to review with him. This, he told the seminar, would most certainly convince students that they should meet with him.

These concerns were valuable, he noted in his journal, but frustrating, lessons. On the one hand, they helped him understand what changes he needed to make in the future. On the other, it was "annoying" that changes would always have to be made.

He brought up in seminar his concern about students not reading the text, responding to a similar comment by Marcus that quiz results may have indicated little text reading. Christian described how he had begun to direct students to corresponding passages in the text during his lecture. Sighing, he said, "I've directed them over and over and *over* again to the textbook." Rather than assume students had read the text, said Marcus, he would begin to incorporate text material in his lectures.

One solution may not fit all situations, said Dr. Simpson, and the student makeup of Christian's and Marcus's classes was probably different. Why don't you both, she suggested, directly address the issue by asking the class whether lectures balanced text material with information they introduced orally. Do lectures cover enough text material? Do they simply reproduce the text and not offer enough beyond it? Asking for that kind of feedback would give both Marcus and Christian a clearer understanding as to whether their suspicions were warranted. "Sometimes we can get our sense of our students from the ones who are the most vocal about it." She then explained how she regularly assessed her own students.

As he had done in his journal, Christian shared with the seminar his puzzlement about declining student participation, indicating that it may have been related to his presentation style, though sometimes he was "lucky" when students laughed at his jokes. He believed student participation may have declined because they had "gotten past the initial exuberance of the semester starting up." Christian had emailed Dr. Simpson about this concern, and she responded by asking whether he had been using classroom assessments to determine the root of the issue. Did he have a way of knowing whether students fully understood the questions he asked? Class assessments had not been very useful, he said in a low voice.

> People don't seem to have been following my prompts, regardless, which is kind of weird. I ask them for one good thing and one bad thing. That's the thing I've been asking the most. Instead, they just write whatever's on their mind. Strangely, they still usually write two points, but not one good thing and one bad thing. I'm not quite sure what to make of that.

Perhaps, he said, there was some "social dynamic" at play that he just had not "grasped."

Did students write their answers to these questions in class or at home, Julia asked. Christian said he usually had no time for written assessment in the class period, but had invited students to give written class assessments anyway, saying, "If you want to give anonymous feedback, go for it. If you don't, you can get out early." Perhaps they felt rushed under those conditions, suggested Julia. He was unsure what to do, Christian said. Students had not even been contacting him through email. Perhaps he could mitigate the issue by asking, after the first quiz, "What did you learn from the exam itself? What did you learn

about your study habits?" Had anyone else asked students these types of questions, he asked. Julia said she had planned to require students to complete feedback questions at home after the first test. Stacey said that method might work better than asking them to respond in class. Marcus agreed.

Had Christian been sharing with his class the feedback he was getting from them, asked Dr. Simpson. He had been doing that in emails, he said, although his messages were probably "verbose." Dr. Simpson said nothing more, but moved on to another topic.

Christian's class on visual perception was videotaped for Dr. Simpson's review. Much of the class consisted of student exercises focused on optical illusions which Christian projected on the front screen. Students almost always responded when he asked questions directly related to what they could see ("Do you see a connection between blues on the screen?"). Response diminished when he asked questions related to text readings. For example, after he lectured for a few minutes about the function of rods and cones, he asked, "Is that the end of the story? What's next?" soliciting information from text reading. For the first ten seconds, no one responded. When someone did, Christian remarked that the text was "wrong" in its explanation. Four times during the class, he made similar remarks about the inaccuracy or lack of clarity of the textbook reading. After he lectured for a few moments about color contrast, he asked what the text had said about the topic. No one answered. Eventually, a student offered a response. "Exactly," Christian said. "It would be handy if the textbook did give a more precise definition."

He described this class in his journal as exhibiting an "absolute minimum student interaction of any class." In the written reflection of the class submitted to Dr. Simpson, he said that, overall, response was not great. He wondered if, by being too "eager" to get students to respond, they perceived him as "pushy." Watching the videotape, he suspected he had not allowed enough time for students to answer his questions. The style of his presentation, however, was "fine," saying that even he could not tell that he had memorized his remarks. Overall, he felt that he could improve on everything the more he taught.

When he remarked to Dr. Simpson in a subsequent seminar that all his flaws were noticeable on videotape, she responded, "I wish I could tell you that that goes away. It doesn't. I hope that always stays, to some extent." However, he felt the videotaping allowed him to make revisions. Responding to Marcus's remark about how difficult it was to see himself on camera, he said, "I already knew what I did wrong in the class period. Okay, I've got that one."

In the next journal entry, Christian said he felt "cramped" in one class, even though he had anticipated beforehand how to trim material if he needed to. With just a minute left of the class period, he was "amazed" that he was able to "get in" a final demonstration he had planned, though this precluded any time for correcting his mistakes or summarizing the class. "I learned that I can fit things into what seems like very little time, but also that it isn't necessarily a good thing. In future classes, I hope to have a little more preparation done beforehand." Subsequent entries mentioned how he "successfully trimmed" lecture material and had an especially "cramped day's worth of course content," despite the lack

of student response. On a subsequent day, he miscalculated and completed his lecture with ten minutes remaining. He wrote that he was able to "recover," and "got a handful of people to give me good and helpful anonymous feedback." Christian wrote that it was "frustrating" that, the more he taught, the more he realized he would have to keep learning to teach.

Student grades were "poorer" than he suspected students liked, Christian wrote in his journal after the first quiz. However, "the class distribution was still normal," indicating the quiz itself was not flawed. When he asked in class if anyone wanted to talk about the results, no one responded, something he viewed as "very odd." "There just didn't seem to be any interest." Christian reported in the next seminar that he was not "happy" that his first quiz average was below a grade of C. In response, he gave students a "little pep talk" about the strictness of his grading criteria. If the grades improve, he said, "then there's no problem," and, if he was at fault, he would "correct it, so they don't need to worry about that."

In the next seminar, Christian reported that, the evening before he distributed the graded quizzes, he emailed students, asking them to share their concerns about the quiz. "*Before* they got their actual answer sheet back?" asked Dr. Simpson. That may have been premature, she suggested, because students may have been unable to give feedback until they actually reviewed their quizzes. "You may try a second feedback after they *have* their quizzes back." Christian said that students had not come to his office to talk about the quiz. Considering the scores were low, suggested Marcus and Julia, students may

have been reluctant to face him. Christian felt that now that they had seen the quiz results, they would realize the importance of participating in class and speaking with him in his office. "Everyone's deciding, 'Oh, what the heck. I'll talk to this person.' They might be more . . . that might translate into feedback on future quizzes. As in, 'Okay. He's going to be asking this on *every* quiz. I might as well give him something.'" They might begin speaking with him, said Julia, because they now realized that he cared about their thoughts. Christian laughed. "I've adopted the pessimistic approach."

Later in the session, Marcus said he was concerned about his credibility with students after making some factual errors in his class. Marcus should not worry, said Christian, as students were so busy taking notes that they were not likely to notice a teacher's mistakes. Surprised, Marcus said he hoped that was not happening in his class. A classroom in which students carry on as though nothing had happened, he said, was not an environment conducive to the kind of reflection he hoped his students engaged in. Christian did not respond.

The way a teacher responded to making mistakes, said Dr. Simpson, can reveal that teacher's assumptions about his or her role. Part of their development as teachers included making mistakes. Christian said that, now that he was "on the other side of the red pen," he had noticed that students assume all the blame rather than criticize the teacher or the test. Pausing, Dr. Simpson said that it was important to understand that reactions like this were directly linked to the developmental stages students were in, ones which often regarded authority as

infallible. What teachers needed to do, she explained, was help students move beyond these ways of thinking.

Christian wrote in his sixth-week journal entry that he had purposely refrained from using class discussion until students gained sufficient knowledge and they had come to a suitable topic. He fully expected discussion to work in his class, and he was happy to report that it had. During the discussion, he was able to "cover plenty of vocab." Unlike other classes, students seemed to understand some difficult concepts. "If only I could find another place for discussion," he wrote.

The next week, he revealed in his journal that he had finally determined the number of times he needed to practice his presentations to be successful: two. The first must occur the day before class "so I can remind myself of the material and find places that I need to clarify." The second must take place right before he presented.

Despite this assertion, he was still puzzled about students' apparent "refusal" to read the textbook. He had even emailed students "chastising" them to do so, something he felt "really bad" about. "I'm trying to remember back to the times that teachers gave similar mini-chastisements to class, and I'm trying to convince myself that such things are just accepted as the teacher's responsibility and then not taken personally."

Not reading has serious implications, he wrote, for how students understood his presentations, and he shared this concern in a subsequent seminar. Class lectures, he said, were constructed with the assumption that

students brought to class knowledge they had gained from readings. He suspected that, given the current reality, the organization of his lectures would be "bad" for students who had not come prepared. "I'm assuming that they have a whole cluster of information." "It's gotten rather annoying when I ask questions like, 'Okay. I don't need to tell you this, but this is textbook content. So what's this term?' It's a basic term from the chapter. I get no response. That's been annoying to me." The only alternative was to explain in class everything they should have read, he said, and the problem with that was they then would have no incentive to do the reading. Other than giving quizzes on the reading, he had done "everything" he could.

Think of this as an opportunity, suggested Dr. Simpson, for some meta-teaching, dramatizing how he could speak with students:

> "If you don't [read], my lectures are going to sound really disconnected and it's not going to make a whole lot of sense to you. You *could* just decide that I'm a bad teacher and the lectures don't make sense. That's one attribution you could make. *Or*, you could say, 'Okay. Well, what you told me is that I need a certain segment of information in order to be able to make sense of the lecture.'"

There is another way to view this, she said. For some students, listening to the lecture first and *then* reading the text might be more useful. While she knew Christian was "really good at" making clear to the students which parts of the text they should focus on before the next class, an ongoing conversation with them about the best ways to use the text readings to make sense of class lectures might be beneficial. Remember, she said, these students are coming from a high school experience where they were assigned a few pages, not an entire chapter to read. Christian did not respond.

When the group began to discuss the topic for the day, active learning, Christian remarked that the required readings made him think that "the active learning method does have an awful lot of qualities of a fad."

> *Many* things have an awful lot of qualities of a fad. There are revolutions all the *time.* There will be another one when this one is done. For all we know, one day they'll be a . . . a . . . research evidence that says, ah, being being a collectivist culture leads to higher learning, and so everybody will try to turn individualist America into collectivism, and we'll need to learn *collectivist* techniques for teaching a class. It could happen. A huge number of things could happen. So this could fade. It's perfectly *valid* if you know the idea of it being one revolution among many. It doesn't make it any less useful, but it isn't a miracle solution.

"Mm-hum," replied Dr. Simpson. The important consideration, she said, was whether active learning was appropriate in every classroom.

In his mid-semester week entry, Christian wrote that student comments on course evaluations "really got my attention." The written commentary they gave was "all negative," but he said that this was to be expected, given he had not allowed enough class time to complete evaluations: "Who's more motivated to get something written even after the class period's over? Naturally." What truly surprised him were the numeric responses that rated him as prepared for class and "enthusiastic about subject." This, he said, seemed to contradict other feedback that the class was "boring." He was not surprised at high ratings for "encouraged discussion questions," as he had "scripted" them into his presentations. What "stunned" him, he wrote, was that he earned highest ratings for "showed respect for students."

He wrote that he felt "nervous" the next class day when he reminded students that what he was saying in class was as important as the material on his

Power Point slides. "It seems as though I'm admonishing the students. However, as with last time, I'm just trying to remind myself of how often I've seen my teachers provide 'corrections' to me and my own classmates."

The next seminar topic was classroom assessment. Dr. Simpson asked the group to think about the "pros and cons" of using assessment techniques. Assessments took time out of the class, said Christian, not to mention the time it took to prepare, read, and talk with students about them. Although he could not express exactly why, he said, he felt that assessments were an extra burden. "But, if your assessment shows that your students haven't learned what you did the first time, then isn't it time well-spent, because, in fact, they might learn it the second time through?" asked Dr. Simpson. He was not arguing their value, he replied, just noting that the assigned readings had neglected to mention the time challenge. The issue was really how to get assessment information in the most efficient way possible.

"That's a really good point," said Dr. Simpson. Did anyone have ideas about making classroom assessment more efficient, she asked. No one spoke for 30 seconds. Bunching his eyebrows, Marcus asked, "Did you say . . . are you trying to . . . get at ways . . . we can save time doing this?" No, said Dr. Simpson, "ways in which you can make the getting of the information from the assessment and the providing feedback about it contiguous. Close in time." Stacey felt that the time she spent on classroom assessment was time well-spent. "I have plenty of time to do it in my classes," she said. Determine first, said Dr. Simpson, the

long- and short-term goals of assessment, noting that more elaborate assessments are sometimes the most appropriate.

In the next journal entry, Christian described his plan of addressing the issue of text reading. He would redesign his lectures, as Marcus had suggested weeks earlier, to include text information by asking, and answering himself, any questions arising from reading. He would ask "open-ended" questions to students. However, in the spring semester class he would institute regular quizzes to test whether students had done the reading.

He discerned a new dynamic in class. As usual, some students averted their gaze because they did not want to answer his questions, but lately he had seen a few students look at one another with, "'Isn't this just funny?' glances. It's that sort of look that people give each other when you've made a tremendous social mistake and are oblivious to it." Now he understood, he said, the emotional impact students can have on teachers.

> I know that I haven't been getting many responses, but this seems like quite a stretch. It is socially wrong for me to ask questions? Or is there something wrong in my presentation *of* the questions? Or, in fact, are any improvements in my question-style irrelevant in the face of students who've decided to disrespect me on their own? I'm not sure, but this is the single most draining thing I have faced so far.

He concluded that a "simple, friendly chat" with a willing student might help him understand what was going on. "Very frustrating."

On this note, he began the next class by asking students how they were enjoying the weather. He distributed Halloween candy. "It worked," he wrote, although, "of course I got more bored stares as we went along." Perhaps, he said, students found him "a little long-winded," noting that he had spent a great

deal of time talking about a small amount of content. While he tried to "ramble" less in his next class, he wrote, students remained disinterested, though "there wasn't nearly as much vehemence to their boredom." What seemed to work was asking students to compose sample quiz questions, "as the questions did touch on things that mattered to me and we could answer them in class. I really hope to be able to use this again."

He noted a similar experience a week later when he opened class (one videotaped for Dr. Simpson's review) with group activities. "Talking and laughing actually happen, even though most of the class still consists of me telling them stuff and them writing it down." He began class by telling students he wanted to deviate from his regular routine, "shake things up," "do things a little differently." Rather than review vocabulary, he projected a slide that read, "Who am I?" and asked students to talk with one another about their responses. Allowing about 20 seconds for them to do this, he asked students to report on what happened. No one responded immediately, so he rephrased the question, "Did anyone describe themselves in terms of what you do or feel?" No one responded, so Christian called on a student who answered. For the next several minutes, he asked several questions about how students had described themselves. Though responses came slowly, and he often rephrased or repeated questions, students answered them all.

As he moved on to the topic of personality, he asked students what their understanding of the concept was after reading the text. Before waiting for an answer, however, he said that the chapter did not offer any "unifying themes"

with which they might understand personality. Instead, lifting up the text and pointing to relevant pages, he said the book seemed to indicate that psychologists were concerned with evaluating many hypotheses about the topic in order to "find the one true theory." Bobbing up and down excitedly, he said, "It looks like all we have is a bunch of conflicting theories. The problem is, textbooks are presenting a conflict that doesn't exist." For several minutes, he alternately lectured and questioned students about the text account, and received no response. The chapter, he told students, was "fragmented." It was necessary, he said, "to get some extra structure" to make sense of it.

Christian described several changes he made to his next class. Although he had initially designed three days for the unit on personality, he condensed material into two and used the additional day for quiz review, something he had not tried before, and gave students a chance to earn extra credit. He deviated from his "routine of asking students for factual recitation at the start of the chapter," and instead conducted a paired exercise. While students spoke to one another, he "overheard discussion of only the most trivial things (things that I put on the board that were already in the textbook)."

Attendance was excellent in the next review session, he wrote, and "a wide range of different" people responded. "Something friendly, engaging, and obviously worth their time seems to have been wonderfully helpful." He wondered what impact recent changes to his classes would have "on future days." Perhaps his students were "getting used to" group participation, something that had "potential, especially if I can get more brave souls to lead the class as we go on."

This tone, however, changed in his next journal entry. He wrote that he was uncertain what to make of a comment he overheard. After finishing a quiz, one of his students told another that his writing was "incomprehensibly complex," and that she was going to say so on his teaching evaluation. "It's hard to accept those words," he wrote, considering students were reluctant to share with him their concerns about quizzes. Had he given students enough reason to believe they could speak openly with him? His questions were purposely more complex than simple requests for vocabulary definitions, he wrote. Length, he decided, could not be the root of the problem. Perhaps there was "something wrong with the phrasing." Unlike when he was a student, "I no longer firsthand can feel whether the learning is happening."

He brought up the issue in the next seminar, over which Dr. Marcello presided. He said one student commented that his questions were not written "in English," that they were "pretentious enough that it's hard for somebody to understand what I'm asking." He recognized that he was "verbose," he told the group, but his intention was to simplify, not make questions more confusing. His conclusion was that students had difficulty with his questions because they refused to read the text. His quiz questions were not "bad."

Stacey asked whether he used vocabulary his students were likely to understand. "I go out of my way," he said, to define vocabulary for his students. Stacey suggested that he might look at some of the group's quizzes to see "if they're that much different from the questions that you ask." Perhaps, she said, students find it more difficult, not easier, to comprehend lengthy questions. Dr.

Marcello suggested he let Julia read his questions beforehand, as part of her research dealt with readers' reactions to vocabulary.

After he solicited written student feedback about his quiz questions, Christian wrote in his journal that they complained that both his speaking and writing style confused them. "This, though frustrating, is useful given that I've known for a while about how I tend to use complicated speech. I can work to measure it and its effect on students over time."

The seminar group discussed the plans they were making for the spring class. Dr. Marcello asked them to "take a risk," to make a major change from the way they taught the course in the fall, to adopt "a different pedagogical technique" so that "it *is* really teaching a different course." Stacey was going to include a significant service learning component; Marcus intended to integrate a multicultural perspective; Julia intended to restructure her class around discussion groups.

Christian began by talking about his course goals. One of the lessons that was "hammered" into him in Preparing Future Faculty courses was the need to assist students with the transition to college. While that was his intention, he was not able to "cover everything" due to a lack of time. A second goal was to include material students could not get from text reading in his class lectures. This had been "somewhat successful." Less successful, he said, was consistent use of discussion and demonstration. He realized that a large portion of his class time had been devoted to the "teacher standing up there and talking, and students reading from a textbook." This had not been his original intention, and "there are

countless other alternatives that we've been studying this whole semester that I've been trying to include," saying he intended to make many changes.

He sighed deeply and looked down. He was going to "trim out the excess," reduce the number of quizzes, add quiz review days, and "extract" the "excess talking" in each module to allow time for demonstrations. For modules without demonstrations, he would "focus on things like the jigsaw classroom, adding components where the students are presenting *all* the material to each other, class discussions." Additionally, he wanted to develop class discussions around the relevancy of course topics to students' lives, and to provide more assistance on the paper assignments by requiring pre-draft teacher conferences. He said he had "messed up" by not providing students guidance for their writing, "so I'm trying to make up for that."

Every quiz in the spring would contain "something different"—a bonus question, or a question related to a comic he inserted into the quiz—and every review session would be organized differently. Students would be required to come to office hours, where he would say something like (speaking in a high-pitched voice): "So, you're done with the assignment. Feel free to come back . . . because this is an easier way to raise your grade. Come back and we'll talk about *anything*. Like, you know that last quiz? I know people are dissatisfied with it. W[ere] there any questions you wanted to challenge?" Dr. Marcello did not respond to the changes Christian outlined, except to commend him for his effort to provide students with skills with which to negotiate college study.

In a subsequent seminar, Christian reiterated a concern he had written about previously in his journal—his realization of, and discomfort with, the need to make constant changes. In this instance, he explained the concession he made to allow a make-up quiz. The troubling thing was that he felt sure that the next time a similar situation arose, "some *other* solution's going to seem perfectly reasonable to the students, and I'm going to have to deal with more of that. Eventually, I'm going to have a quite a *pile* of perfect and reasonable solutions that I don't like."

In the last seminar of the semester, and in a subsequent interview after the term had ended, Christian reflected upon the challenges of his first teaching months and looked towards the future. He "didn't know enough at the start to *have* concerns. Now that I've seen *where* things can go wrong, now I understand things a little better, and I can just plain avoid them in the future."

Time, he said, was and would be his biggest concern. He recalled his worry at the start of the semester whether he could find the time to complete 12 teaching modules, "whether I'd be able to get the work done so that it would be really worthwhile for them." Fitting relevant and interesting course material into class sessions was a consistent challenge. He often compromised the amount of time he spent on the application of concepts.

> That is the concern I was having at the start of the semester, that I was talking about so many things. If I had to trim something, it was critical. Critically bad. The critical failure of the system. That sort of critical. I'm still concerned about losing the things that matter, but, as the semester wore on, I found that I had fewer and fewer things to say that mattered.

This happened more often when he taught material he was less familiar with. Nevertheless, his constant attention to trimming worked, "magically." He knew this because he never had to cut quiz questions prepared when he first constructed the teaching module.

Another puzzlement was the "blatant, blatant" misunderstandings about his communication style. "I'm *me.* I talk. I don't necessarily hear myself talk, and I'm verbose. I don't know to what extent I was being unclear." He repeated that, in the next semester, he would address this by warning students of his tendency to be wordy. When he expressed this in seminar, Stacey reminded him that he had shared his questions with Julia, who did not find them wordy. She wondered if the problem was idiosyncratic to the fall semester's class. Dr. Simpson, who had also read his questions, suggested that he find a reader outside the field of psychology. She found that, as a psychologist, she assumed she was being clearer than students actually perceived. She repeated the conclusion she made in an earlier seminar that some students might find lengthy explanations confusing, and said that, "on average," his questions seemed more different from the textbook" than those of the other seminar members. Perhaps he could use some meta-teaching to explain his intentions in asking questions the way he did.

When the group talked about best ways to determine whether students were learning, Christian noted that it was easy to know when he was learning as a student, but, as a teacher, he really had "no idea" whether his students were learning. He had never "felt a vacuum like that before," despite his attempts to

listen to their conversations in class. "I have no *idea* if they'll take anything away from this class." Perhaps an inevitable reality of teaching was this "futility."

How might he find out what his students learned, asked Dr. Simpson. "It seems important to know if they came away with anything." He would know, Christian responded, by witnessing student behavior, like speaking out loud or smiling. "I would know that the students cared, and therefore they might learn, if I saw that." Unfortunately, he said, his students had shown "essentially no interest," even on topics he chose specifically because he felt they would find them intriguing. "I haven't seen any spontaneous evidence of their interest."

By semester's end, Christian looked to the next semester with new understandings. He had reconsidered his aspiration to be regarded as a "friend" to his students.

> When half of them referred to me as "Mr. [Smith]" instead of [Christian], and some of them specifically said they weren't comfortable referring to a teacher as anything other than "Miss," "Mr.," or "Mrs.," it's already clear that a lot of that's not going to happen. You wouldn't refer to your best friend as "Mr." Right there, that idea falls through. I *think* . . . I think I'm going to have to be disappointed on this one for an intro class.

The reading he had done before he taught indicated students sought personal relationships with their teachers. After a semester in the classroom, Christian said, he had never "seen any evidence of what those readings told me." Perhaps things would have been different had he been better at "social interactions with students."

He was especially concerned about the first class of the spring semester, believing that students "judge the class by the first experience." He said that he would practice his explanation of the syllabus "multiple times" to make sure it was

comprehensive. "I am going to give them enough information that they know if they don't read about the quizzes and papers and stuff on their own, then they're going to be lost. I'm going to make it very clear that they need to read it." In the fall semester, he had given up "on the idea of everybody to have read the textbook, because they had no incentive to. They would be willing to just sit there and not talk if no one knew the answer. Since everyone knew that, there was not any particular reason for any one person *to* read it." Things would be different in the spring, he said. Mini-quizzes at the start of chapters would provide the incentive to read. He had learned that repeated admonitions to students to read had no effect. "This time, there's going to be consequences if they don't do it."

Christian regarded the challenges of the first semester as important lessons for the future, and he did not reflect only upon what troubled him. The seminar had familiarized him with important teaching resources. Readings and discussions gave him "things to *do*." He had been introduced to a variety of teaching techniques, "beyond me talking," ideas like jigsaw exercises and class assessments. "Out of a gigantic pile of people theorizing on what works and what is needed, it was inevitable that I'd find something that would work, right here, right now."

He was pleased with the opportunities his teaching gave him to make students respond. Something as simple as "wearing a silly hat," as he did on one occasion, generated "laughter and smiles." In those instances, he said, he knew that "I just did something that *mattered* to them, something that they'll remember even if it may not have that much content." He enjoyed "all the little moments

when humanity showed up" that occurred when students volunteered information, and when the entire class laughed at things he said.

While positive outweighed negative comments on his semester evaluations, he was sometimes puzzled. One student described him as "nice," but strongly disagreed that he presented course material effectively. Few students offered comments about how course principles related to their lives. Although he did not agree with one "scathing" criticism, he felt it was a "problem" that a student would come away with such a negative feeling.

Analysis

In an interview near the end of the fall semester, Dr. Simpson described Christian's modules as some of the best she had ever seen, full of depth and content. However, he was in the classic position of many new teachers—trying to do everything well. "He gets that he needs to be doing discussion, as well as lecture, and students to take responsibility for their own learning. He gets all that, but [he's] trying to pull all that off in a first class."

While particular characteristics of reflection are equated with good teaching, Calderhead and Gates (1995) caution that "we may frequently have overly high expectations for the achievements of student teachers," as reflective practice is "a very high-level demand to which few students are able to respond" (p. 9). The ability to create the complex and well-organized schema involved in learning to teach is widely variable and developmental, and requires time in practice (Barnes, 1987). As well, the traditional view of teaching has not, until recently, paired practice with reflection, especially in higher education, where

teaching activities have been associated more frequently with the pragmatic behavior necessary to get through a course than with a deep understanding of the consequences of teaching action (Elbaz, 1988; McNamarra, 1990).

Though criticized by Schon (1983), the new teacher's efforts at instrumental problem solving are commonly regarded as initial and necessary components in the development of more complex reflection on practice (LaBoskey, 1995; MacKinnon, 1987; McIntyre, 1995). Valli (1993) defines technical reflection as that focused on discovering ways to achieve goals, employed as a means of producing efficient and effective teaching and learning. This reflection addresses

> the means or procedures for delivering education while leaving important questions about the purposes, values and goals of schooling unexamined. . . . [T]he *scope of reflection* is restricted to the *means* of managing classrooms and delivering instruction. Technically reflective teachers would be concerned with such questions as: Was the class under control? Am I moving through the curriculum in a timely fashion? They would not question whether the curriculum was *worth* getting through or what harm certain behavioral techniques would cause. (p. 12)

Because they have few experiences that contribute to the implicit knowledge of their teaching, novice teachers quite consciously deliberate about their actions, but that deliberation is often informed by a need to control and to survive (McIntyre, 1995; Sprague & Nyquist, 1991). Reflection, then, focuses on questions about how teachers are regarded by their students, and how teachers can manage to accomplish their assigned tasks. Because they operate from a shallow experiential base, it is not surprising that their attempts to reflect are colored by feelings of vulnerability. Nevertheless, even at technical levels, the

overall protocol of problem definition, means/end analysis and generalization leading to action are in place (LaBoskey, 1995).

The problems he identified as significant, the methods and sources he used to analyze them, and his resulting responses indicate that Christian often operated at the technical level of reflection during his first semester of teaching. Three areas of reflection marked his semester. From the beginning, he was concerned about measuring and shaping material to fit into class time. Less frequently, but throughout the semester, he reflected on ways his students regarded him as a teacher. An emerging preoccupation was his concern about lack of student participation, including fulfillment of text readings and the confusion related to his communication style.

An analysis of Christian's first semester of teaching reveals number of paradigmatic, prescriptive and causal assumptions that influenced what he identified as difficulties, how he thought about them, and, ultimately, what he did in response (Brookfield, 1995). Prescriptive assumptions, beliefs about what the teaching/learning situation should look like; causal assumptions, beliefs about the how processes can be changed; and paradigmatic assumptions, less conscious and more tightly held beliefs about how the world works, are the factors that, except in the very technical attempts of the novice teacher, undergo inspection if teachers' paradigms of thinking are to change.

Christian's process of technical reflection, although often different from others in the program, included the necessary components of reflection: identifying problems, reasoning causes and determining response. The assumptions he

brought to the experiences, the contextual factors of the situation itself, and the influences of the teaching program experience shaped this analysis and response.

Time. A paradigmatic assumption Christian brought to the teaching experience was that course content could be efficiently patterned to fit precisely within the boundaries of class time, and that it was within his capability to do so. While he seemed to have entered the teaching situation with this concern, the realities of the classroom continually challenged the notion, as he always felt the need to make adjustments. Twenty-one of 32 journal entries referenced deletion or addition of material as it influenced, or was influenced by, available time. This concern was apparent in "measurement" vocabulary: "filled the class time," "fit in," "trimmable," "remove," "spare time," "equal numbers," "try to fit," "total amount," "efficiently," "compress," "trim," "same total," "squashed," "cramped," "minimum," "full day," "get rid of some stuff," "cover," "sufficient," "how much," "add more time," "finished the content," "plenty of time," "condensing," "rearranged the class," "sacrificing *some* in-class talk," "*more* time," "didn't quite get to cover."

Quantity was often used as the only measure to determine student engagement. Receiving fewer handouts the first class day than he distributed was a sign students were interested. Classes "worked" when "a bunch of people" responded to questions, or when "far more people" stayed in class after dismissal time. Although numerous, entries attribute success or failure without evaluating the assumptions leading to that assessment, a behavior representative of many

novice reflectors (Tann, 1995). It appears that Christian's need to focus on this issue stemmed from a set of causal assumptions that equated his management of the class material with control or competency (Brookfield, 1995).

So significant was Christian's preoccupation with time and quantity that his response to Dr. Marcello's request to make a major change from the fall to spring semester was to restructure the components of the course, trimming and extracting material. Significantly, he announced that the reason for this restructuring was to allow space for teaching activities—discussion, review sessions, demonstrations—that he realized were advocated by his courses on teaching but that he had been unable to include (for reasons of time or appropriateness) in the fall semester.

This explanation stands in contrast to the controlling reason that informed his tailoring of the fall semester, indicating that he had learned enough from his first teaching experience to adopt very different teaching techniques in the future. His new approach for the future seemed to rest on the recognition, if not yet his own assumptions, that active learning was valued by the environment within which he operated (the graduate program, courses on college teaching, and psychological theories of cognition).

In the fall, however, his trimming stemmed from a need to fill, but not overfill, the 50 minutes of class time, and to select material that was of "interest" to the students. That is, a goal of efficiency seemed to have prompted Christian's adjustment of course material. Dr. Marcello's metaphor about the new teacher's experience seems appropriate: "They're learning to drive a car. They don't have

time to think about all the things that could be happening. They're flitting about, concentrating on one thing, and then something else gets fallen behind. Eventually, you can turn on the radio and listen to music. You can carry on a conversation."

In the fall seminar, Christian regularly responded to suggestions for more thoughtful use of student assessment or more frequent use of class discussion with skepticism. He did not have enough time. Christian was not ready to fully examine the benefits of active learning teaching methods. Instead, he seemed compelled to make things work, to maintain control of the vehicle he had managed to construct. He limited his reflection to management issues, and resisted attempts by the seminar group to examine his assumptions about them. Once again, Christian seemed to demonstrate a need to control what occurred in his classroom, something he would be less able to do if he structured the class around active learning techniques.

This profile was evidenced in seminar sessions where Dr. Simpson and other group members problematized Christian's concerns about the possibility of employing active learning methods, such as discussions and class assessments—and in the reactions he exhibited in return. For example, Christian's first reaction to Dr. Simpson's question about the negative factors of class discussion was that it was time-consuming, a conclusion he seemed to draw even though he had neither designed nor used the method to date. Dr. Simpson engaged in means/end analysis that directed the group to unearth their assumptions about how class discussion could be defined. That is, she invited

the group to explore paradigmatic assumptions about how they structured the concept of active learning (Brookfield, 1995). While Christian clearly exhibited an understanding that "good teachers" should use discussion (a prescriptive assumption), he did not respond to Dr. Simpson's suggestion that active learning was not necessarily confined to activities that he had marked as time intensive. Unlike Christian's, Dr. Simpson's reflection about discussion, active learning and lecture was exploratory, not reductive. For Dr. Simpson, the factor that determined the relevancy of practice was its correlation with teaching goals. Several weeks later, Christian indicated his suspicion that active learning was a "fad," something currently popular but of questionable value.

Similarly, Christian immediately reacted to Dr. Simpson's invitation to explore the pros and cons of class assessments by describing the time it took to prepare, read and review them (indicating that he had previously visited these considerations). What he did not do, something that Dr. Simpson immediately presented, was evaluate the reasons behind the use of assessments. Christian seemed to consider his management of time as more important than, or at least as important as, the examination of his beliefs, assumptions and methods of practice.

This tendency to ask the "What works?" rather than the "Why?" questions about his teaching indicated that Christian operated as a "Common-Sense Thinker," a teacher whose reflection is not marked by the analysis, synthesis and evaluation categorized in the higher levels of Bloom's taxonomy (LaBoskey, 1995). Prior beliefs about teaching and learning, the degree to which teachers

tend to engage in analysis of beliefs and assumptions, and the emotional factors of the teaching situation, may all contribute to a Common-Sense approach to reflection. That is not to say that the locus of Christian's reflection was unwarranted. His rigorous attention to the structure of his pedagogy, a common feature in the reflection of novice teachers, was a suitable response to his interpretation of classroom reality.

The operant definition of reflection positions it as a reaction to a felt problem. Christian never framed his class lecture as a locus for problems. In fact, he consistently insisted that he knew how to "present" before coming into his first semester teaching. To the degree that it affected his presentations, this concern with creating a mosaic of materials that fit into class time was one problem that he felt able to deal with.

Relationship With Students. The affective component of reflection is believed to be a significant, if difficult to describe, factor in the process (Izard, 1977; LaBoskey, 1995). Novice teachers typically center initial reflection on their performance, while more experienced teachers move away from reflection about self to reflect about their learners (Nyquist & Sprague,1998; Tann, 1995). Novice teachers bring to the field strongly held theories, as yet untested, about the relationships between teachers and students (Tann, 1995). However, these theories, created over years of being a student, are usually only relevant with students who share the teachers' learning preferences (Nyquist & Sprague, 1998). This places teachers who are operating at an instrumental level of reflection in a particularly vulnerable position.

Christian seemed concerned about how students regarded him, especially as he exercised his teaching responsibilities. He was "nervous" about "admonishing" students to take notes, and felt "really bad" that he had to "chastise" students for not reading the text. "It's hard to accept those words," he wrote on the day he overheard a student complain about his communication style. When students did what he asked, Christian did not seem to gain confidence. Rather, he made statements that indicated their compliance was a matter of chance, describing himself as "thankful" and "heartened" and "pleasantly surprised." At one point he suspected that student resistance to speak with him outside of class would simply disappear if he continued to invite students to his office. His conclusions about the causes of and solutions to the problem did not entail the complex reasoning apparent in the thorough exploration of beliefs and assumptions characteristic of the reflection of more experienced teachers.

"The single most draining thing I have faced so far" was his suspicion that students were scorning his "social mistakes." For the first time, Christian examined potential reasons for this behavior. Was it "wrong" of him to ask questions? Was he asking them inappropriately? Some "weird" social dynamic was at play that perplexed him. Rather than experiment with reasons related to his own assumptions about his relationships with students, he focused on factors he might adjust, finally resting with a simple conclusion that talking with a willing student might solve the problem. To a reflector operating at an instrumental level, this approach seems appropriate.

Nevertheless, his subsequent actions indicate that, at some level, Christian was attempting to explore other reasons behind this troubling event. He did so by experimenting with new teacher-to-student behaviors, talking about the weather, distributing candy, and being mindful of "rambling"—indicating that he was exploring the causal relationship between his actions and the responses of his students. While he described that his class seemed friendlier when students were engaged in activities, he did not reflect about why that seemed to be the case. Perhaps he was unwilling to do so because of a strongly held conviction that methods like discussion were not appropriate or possible in his first teaching experience. Once again, the reasoning behind this strongly held assumption was not examined.

Concern about his relationship with students colored the way he reflected about student comments that his communication style was confusing. His reflective analysis raised several questions. Were students uncomfortable talking with him? Did they misunderstand the intent of his questions? Was there something really "wrong" with his phrasing? He raised the issue in seminar, exposing it to the scrutiny of public reflection. The group offered different ways of framing the issue as it related to the development of learners. Nevertheless, Christian continued to assert that the problem would be solved in the future if he simply "warned" students that he was wordy. It is possible that, because Christian saw this concern as one arising from his presentation style, something he felt quite confident about, it was difficult for him not to default to framing issues as simple problems that could be solved easily.

By the end of the semester, Christian had abandoned hope of establishing the friendly relationship he had thought possible with students. Significant, however, was that the reason he voiced for this resignation was not one he had explored in depth before, but one that was raised by the seminar group--the developmental levels of his students.

Paradigmatic assumptions represent "the basic structuring axioms we use to order the world into fundamental categories" (Brookfield, 1995, p. 2). For Christian, these assumptions were represented by expectations he had about how people relate to one another, and what it means when they do not. Since these types of assumptions are the most difficult to unpack, and carry significant consequences of reshaping fundamental beliefs when they are, it is not surprising that Christian reacted at an emotional level to what he perceived as challenges to his expectations of others. This would explain his reluctant but largely unexamined conclusion that he could not be a friend to students.

Participation. Although Christian's regard for class participation was evident from opening journal and seminar comments, the issue emerged only over time as a significant area of reflection. From the very first day of class, he was pleased, even surprised, when students participated. Students answered his questions and laughed at his jokes. Though he did not seem entirely to expect it, there was no need to reflect on student behavior that was anything but problematical. This absence of need continued for several weeks. Though he noted by the end of the second week that student participation had waned, he reasoned that his intentional presentation structure was the cause.

Indication that he was beginning to perceive lack of participation as a problem occurred only four weeks into the course when he diagnosed student inability or unwillingness to answer his questions as a symptom of confusion caused by a misunderstanding about the reading assignment. Following the first troubling set of quiz grades, however, Christian began to detail more often when students failed to participate, to read the text, to take notes, or to speak with him in his office. He reflected by positing a number of causes. Did they read the wrong chapter? Did they misunderstand the assignment? Did they misunderstand the importance of taking notes and meeting with him? In each case, he came to a speedy action response. He would require that they bring texts to class, remind them to read the syllabus, change the amount of written material to influence note taking, and create a situation of imbalance (that would result in student visits to his office) by deleting an anticipated quiz review.

Apparently, these issues were significant enough to solicit feedback from the seminar group, though Christian only announced his suspicion that students were not reading the text after Marcus shared the same concern. Part of Christian's frustration seemed to stem from his disposition to believe that frequent and repeated communication with students (in class, on the syllabus, through email) would result in changed behavior—a causal assumption that was regularly dismissed by the group. Instead, seminar participants problematized the concern in several ways beyond the assumption that students were not hearing his instructions. Dr. Simpson modeled a different level of reflection by hypothesizing that student development may have been a factor. In the ensuing

discussion, however, it seemed that Christian was unready to explore reasons beyond a belief he had run out of luck or that the "honeymoon" period of initial student excitement was over. Though Dr. Simpson invited him to explore more deeply the connections between student assessment and participation, he rebutted her suggestions by insisting that he had tried everything and there was no time to devote to more classroom assessments.

Although Christian was quick to answer the group's suggestions for how to frame the problem, there was some evidence that, subsequently, he considered hypotheses beyond his initial posits. He did this by speculating about an unidentified "social dynamic," admitting that his assessments were negatively impacted by the method he used to conduct them, and by hypothesizing questions he might ask in the future. In several subsequent instances, Christian's protocol seemed to be rebuttal of the group's reframing efforts, followed by indications (often some time afterwards) that, outside of the public arena of the seminar, he considered them as viable responses to his problems.

This occurred when, for example--though he indicated to the group that further solicitation of student feedback was futile--he subsequently asked his students to comment on the quiz, and in a way that provided the time and safe space recommended by the seminar members. He did what Marcus suggested in seminar by including textbook content in his lecture. He broke from his lecture pattern by having students write quiz questions and by opening class with demonstrations. He included, in his plans for the spring semester, activities that

his cohorts had found successful but that he had not included in his first teaching experience.

That is not to say that Christian's new behaviors resulted in what he interpreted as the solution to lack of student participation, nor that he regarded the need to change with excited anticipation (in fact, he called it "frustrating"). Neither did it assure that he would radically depart from the thinking and reactive behavior that he employed in his first semester.

What Christian's experience does represent, however, is the influence of others on the learner's capacity to reflect. On his own, Christian struggled to move beyond an instrumental reflection of his classroom experience. The seminar, however, challenged the limits of that approach and demanded he consider the issues in ways not typically exhibited within the pages of his journal. His reluctant willingness to subject his teaching experience to the dialectical problem-solving of the seminar represented, at some level, the open-minded attitude that Dewey (1933) contended was a necessary component of reflective thinking. At the same time, the fact that Christian said he understood the importance of using different teaching approaches to elicit student response may have represented public compliance with the group's prescriptive assumptions about the value of certain teaching methods.

The differences between individual and group reflection are the operational differences between "single" and "double loop learning" (Argyris & Schon, 1996). The instrumentalist approach of the former is typically employed to manage daily problems. Ultimately, it does not demand that the learner reflect upon his or her

habitual ways of thinking, the assumptions or beliefs that influence the construction of a felt problem in the first place (Brockbank & McGill, 2006). Christian's tendency to examine a very restricted set of causes and solutions, as well as his disinclination to unpack his own personal assumptions, indicated a proclivity to learn about teaching (in this particular circumstance) in this way. Once the teaching problem became the "property" of the seminar group, however, those habits of mind became the objects of public questioning. In this way, the possibility of "double loop learning" was created, "where assumptions about ways of seeing things are challenged and underlying values are changed" (Brockbank & McGill, 2006, p. 33). This social constructionist view contends that Christian's learning was influenced by his interactions with others (Kim, 2001; Kukla, 2000).

As a novice teacher, Christian was in the fortunate position of participating in an environment that encouraged change through reflection:

> In extreme contrast to the needs of experienced practitioners, the needs of novices and the best opportunities available to them are in gaining access to useful ideas from various other sources, with reflection on their own experience being primarily useful to them for the important but limited purpose of motivating and enabling them to see the need for these ideas from external sources. (McIntyre, 1993, p. 44)

Despite the feedback he received from the group, Christian insisted, even at the very end of the semester, that he "knew" how to do presentations. It seems as though he did not readily connect the hypotheses posited by the group with the possibility that characteristics of his presentation style may have contributed significantly to the problems he identified with class participation.

What Christian and the seminar could not be conversant in were the classroom dynamics that may have revealed other ways to reflect upon the issue of student participation. Only two classes were videotaped and reviewed by Christian and Dr. Simpson. The rest of the seminar group never saw them. What Christian's students experienced in the visual perception class, for example, was significant class participation in response to some questions, and marked decrease in participation for others. They also witnessed an unintended but persistent message from Christian that understanding textbook readings was of suspect value, as he often criticized them. Instead, Christian described, without reflecting on these factors, that class participation hit an all-time low in this class.

The Spring Semester

Narrative

Christian's spring class consisted of 50, mostly first-year students. He "stitched together" a new syllabus that, while it replicated much of his fall material, contained significant changes—all of which can be linked to challenges he identified in the fall. While he dropped the explanation of his classroom philosophy, and did not tell students to take notes as they read the text, he wrote that students should try to "figure out" what the major themes of each chapter were, and suggested, "it can help to bring the text" to class. He added "mini-quizzes" at the start of each chapter, which, he said, would "monitor" their reading. These would consist of three multiple-choice questions "that can be answered easily if you have read the material." He changed the number of regular quizzes from four to six.

A new requirement was that students were to meet with him before the due date of the paper "so I can help you tease apart the details." Additions were also made to the explanation of the late policy for papers. Missed laboratory experiences would result in "both a lower lab grade and a 0 on that paper," and, beyond his exception for "extreme circumstances," "there is *no* make-up work."

In the class schedule, a chapter on body rhythms and mental states, and a chapter on thinking and intelligence, were dropped, and five "review days," as well as two quizzes, were added. At the end of the semester, three days were headed, "Topic to be determined by voting in class."

Christian made daily entries to his journal, but, unlike the semester before, they were usually no longer than three or four sentences long. Noting that his first class was relatively quiet, Christian wrote, "that should change over the course of the semester," saying that many students were "willing" to smile and laugh. His first day's content was successful, he wrote, because he covered "it all in time, even when monitoring my speaking speed." Students remained "willing" to speak in the second class, and he said he intended to raise enthusiasm at the beginning of the semester. "Now, I just need to keep giving students stuff that is interesting so I can utilize moderate enthusiasm later on." Two weeks later, however, he wrote that this plan to generate enthusiasm had "a limited life span." It was essential, he said, that he make sure the questions he asked students were "interesting enough to the average bored person that someone feels prompted to answer."

Student scores on the first "mini-quiz" were high, a result he attributed to "sufficiently easy questions." However, he had "extra time" at the end of class, writing that this was something to "keep an eye on." In subsequent class days, he was concerned that exercises were not taking as long as he had planned—echoing his time concerns from the fall semester.

His first attempt at soliciting student feedback, by using a technique called the "muddiest point," was questionably useful. When he asked students to write down, anonymously, the aspect of the class that most confused or troubled them, students most commonly criticized the time he spent explaining how to organize class content. They wrote that he seem "disorganized." That seemed to him a contradiction, something he could do very little about.

In the fourth week of the semester, Christian gave his first quiz review, and wrote that students' response was "rather odd." Although he told them that he expected them to discuss material, and even would provide them with snacks if they did, "the students were more interested in me talking than them." He was truly surprised that they were not prompted to talk by the promise of chocolate.

Christian described his students as "human" in the next seminar. They were confused about assignments and unsure about whether they should meet with him during office hours. He believed that, once they took the first quiz, they would have a better idea of his expectations. Though almost no one spoke in his recent quiz review session, he said, that would change after the first quiz. "I don't need to worry. It's going to be self-correcting, and, if it isn't, then something more specific will pop up that I can handle."

Perhaps, suggested Dr. Marcello, the opposite might happen. "Fewer people will start showing up." That would be "acceptable," Christian responded quickly. He wanted only those students who took the review seriously to attend. Perhaps they did not interact, he said, because they were "expecting the teacher to present material." Did you let them know beforehand, asked Dr. Marcello, "what *should* happen?" Christian answered:

> I told them that we were going to be talking about the content, *and* I was going to bring things, like chocolates and Handy Snacks, and, if anybody was willing to take the risk to talk about, what you think is wrong with these wrong answers, or whatever, then you can have your pick of all these goodies. It's like extra credit, only you can eat it.

Perhaps one interpretation, said Dr. Marcello, was that some students have no interest in review sessions. Another way to look at the situation was that the teacher could "give them more guidance." He modeled how he might speak with students, explaining his dissatisfaction with the first review session and asking students to come to the next one with a question they wanted answered. This was something he had already concluded he would do for the next session, Christian said. Still, as in last semester, it seemed students were not interested in talking, so he might get no increased interest if he asked them to write questions. Why wouldn't he assume, asked Dr. Marcello, that students would be "invested" in the questions they brought. Christian rebutted by asking how interested students could be if, in a class of 50 students, it was unlikely their question would get a class-wide audience. Describe how you would use the questions in the session, Dr. Marcello requested. After Christian attempted to do so, he conceded

that he might develop the review session in such a way that made it more likely that everyone's question would get an audience.

Stacey asked the group's advice on strategies for slowing her speaking pace, as students had remarked that she spoke too quickly. Marcus suggested that, while pauses in her presentation might seem inordinately long to her, they were probably not perceived that way by her students. Christian asked how much of her presentation contained examples. He had found that his students looked bored when he gave examples, so he concluded that he must be speaking quite slowly when he gave them. That had not been her perception, said Stacey. Students, she said, seemed to spend some time thinking about the relevance of examples to the day's topic, but she did not interpret that as boredom. Shaking his head, Christian said, "When students [making a face and sighing] *every* time I start an example, I know what's going on." This was problematic, he said, because, although he told students "time and time again" that his examples represented applications that they would see on future quizzes, they regularly "ignored" everything (by not taking notes) but definitions. Consider, offered Dr. Marcello, that teachers often misperceive the behaviors of their students. He would take special care to notice the behaviors of Christian's students when he observed his class.

Conversing with some of the group members after the session, Christian said he was not surprised at the lack of student engagement in his class, as psychology was low on the list of students' priorities. With a puzzled look on his face, he said he was amazed how engaged teachers had to be compared to their

students. Then again, he said, "Students know how well their learning is going, and the teacher doesn't have a clue. I'd like to know *what* they think they learned."

The class day after Christian gave the first quiz, he arrived early dressed in chinos, a flannel shirt and tennis shoes. Thirty of the 50 students had arrived when class began. Students had already been able to access their grades, and the class average was quite low. "It's time to reflect," Christian began, about the results, speaking with medium volume. Think of the quiz, he said, as a "learning experience." He was unsure why grades were so low, but said he had "some ideas that might help."

For the next several minutes, he worked through each quiz question, noting the question wording that students seemed to have missed and the vocabulary they seemed to have misunderstood. Besides reading questions carefully, he cautioned, students needed to come to the quiz with a thorough understanding of the "major themes" around which class material, and quiz questions, were organized. "If you're anything like me, it's quite literally true that those larger themes would help you with your studying. It's very important to find the connections" in course material. Most of the session consisted of Christian's explanations. When he did ask questions ("What do you think?" "What's the differences between these things?"), almost no one responded. To conclude the session, he asked students to pair up and discuss their understandings about the quiz with one another.

Describing how one student, in the first quiz, misunderstood how to fill in the bubbles on the answer sheet, Christian wrote in his journal, "You can't assume anything universal about your students." He repeated almost the exact phrasing to the seminar group: "You cannot make any universal assumptions about all of the students in the class. They'll *always* be some exception."

He explained to the group that, just as in the previous semester, his students were not reading the syllabus. He knew this because one student submitted a paper that did not comply with the syllabus guidelines, including the requirement that students meet with him before submitting. Did this happen with just one student, or many, asked Dr. Marcello. What lessons can you take away from this experience? At first, Christian had difficulty articulating his answer, but then he described how he might react to the student. "So your approach is to be reactive," said Dr. Marcello. "How about being proactive?" Perhaps, if Christian continually reminded students of the writing requirements in the syllabus, maybe he could avoid the problem. This, said Christian, was something he had already done. "That's the best you can do," said Dr. Marcello. If only one student was having that difficulty, he suggested, then "it's really working, because if you had several students who had that same experience, then that would be a symptom that maybe you're not doing something right."

As everyone in the group had given their first quiz, the discussion turned yo students' post-test reactions. Christian described how, in the previous semester, he had attempted to have students reflect on "if they'd studied correctly." He said that he had done it "wrong" last semester, however, as he

made this request before they knew the results of the quiz. This semester, he waited until student quizzes were returned, and then gave extra credit if students described how their studying had affected their grade. Smiling, he said that everyone had "put real thought" into their answers. "It *sounds* like they were taking it seriously."

On the class day focusing on compliance, Christian began by asking his students to stand and "do a wave." Laughing quietly, the class did as he asked. Christian gave two more commands, and most of the class complied. With a bemused look on his face, he asked, "What did I just demonstrate?" When he did not get an appropriate response, he suggested that students open their texts to the assigned reading. Though a few students did, no one responded to his question. Christian then explained that the demonstration illustrated ways people influenced one another. Did they remember reading about compliance, he asked. No one responded. Nor did they respond when he asked, smiling, "How often do you do the wave in class?"

Moving into his lecture, Christian reviewed material about social thinking and attribution theory, and read a story requiring students to assess the moral choices made by characters. Students raised their hands when he asked for a count of those who chose different characters as morally responsible. However, as he discussed the case, and asked more elaborate questions, fewer students responded. When he did not get a reply, Christian either rephrased the question or answered it himself.

"What in the world does any of this have to do with social attribution theory?" he asked. "Think about this." Without leaving time for students to do so, he asked another question about how a court of law would view the responsible party in the story. When a student in the front row answered (too quietly for the rest of the class to hear), Christian responded, "Obvious. There's no question about that. That's not what I asked. I *asked* you to assign where the responsibility was." She did not answer. "What do you think was different in the responsibility they placed on the woman, versus the other characters?" Christian asked the class. After three seconds a student answered. "Okay," responded Christian. "Internal." When a student said that one particular character in the story was culpable, Christian responded, "Huge surprise. *Obviously* the highwayman is most responsible for what happened."

Using the Power Point slides, Christian lectured about attitude influence. "So, I've given this description of how we talk about attitudes, and you've got an idea of what attitudes *are*. What influences our attitudes?" Without waiting for a reply, he projected a slide with the last question as a title, and read the list of influences typed beneath. The first item, entrapment, he reminded them, "showed up on the mini-quiz," and he gave the textbook pages on which the explanation could be found. Repeating the definition twice, Christian then gave several general examples of how entrapment was used in advertising. He then asked the class, "How many people here have ever gotten a call from a telemarketer who started off by asking a simple, unbelievably easy question? Does that sound familiar?" Looking at the class, he repeated the question when

no one responded. Three students raised their hands. "Okay," he said, and continued to explain how this represented an entrapment technique. "What leads people to act in accordance with a direct order?" he asked. Without looking at the class for an answer, he began to explain the Milgram study of obedience, ending the explanation with, "A lot of this is actually pretty self-explanatory. *Or*, you've seen it before."

After reminding the students how the text reading described entrapment, he said, "You *know* what entrapment is," and then asked what influenced them to obey his commands at the start of the class. He waited ten seconds for a reply, looking at the students and walking back and forth in front of the classroom. When a woman responded, he asked her several follow-up questions to elaborate her answer ("What *about* the authority figure?" "But *why*?" "What's so special about *me*?"). Another student responded, and, again, Christian asked an elaboration question, "Like what?" He did not repeat what the student said, and the student's reply was inaudible to most of the class.

"Pretty much as expected" was Christian's journal assessment of how his classes were going. Less elaborately and less frequently, though recurrent, was the previous semester's theme of trimming material and the consequences of too much or too little time, although he often said he had "solved" the time issues of the semester before.

When Dr. Marcello invited the group to share what had gone well in their classes, Christian was the first to speak. Although he had used class discussion

only once the previous semester, he had just used it again. As it had before, it "worked again this semester."

> I had found it very hard to figure out where in all the content students would have anything to say. I wouldn't have them *discuss* sensation and perception because half of them wouldn't even know what it had to do with psychology. So, last semester, I tried having a class discussion on learning. I said, "What does this behaviorist stuff have to do with a college education?" I tried to have a discussion to make the connections.

Describe how you organized the discussion, asked Dr. Marcello. Christian said he prepared a list of questions beforehand on classical conditioning. Other than that, he said, the class differed little from others in which he lectured. "Teacher stands up there. Says things to students, and, in this case, waits for a response." Because they were not reading the text, he said, his students could not answer questions originating from the reading. However, once he asked more open-ended questions, things were "fine."

One way to encourage text reading, suggested Dr. Marcello, was to give short quizzes at the start of chapters. This was exactly what he was doing, replied Christian, although they were not "making a difference," as up to a third of the class was absent every day he gave them. That was "perplexing," said Dr. Marcello, as his own students always took this type of quiz seriously. Perhaps the difference, said Christian (sighing loudly), was that Dr. Marcello's class was held in the afternoon, not in the morning like his. "It would really be nice," he said, if he could ask his students for "factual material" from the text. However, now that they were two chapters into the course, he knew for certain that "no one" was reading. That required him to "come up with all the applications beforehand, and

ask, 'Have you seen this application?'" and then remain quiet and hope they came up with it on their own.

That was an acceptable approach, said Dr. Marcello. In fact, "that's part of good teaching, to be prepared with, not only the questions for the answers, [but] to adopt a Socratic style to try to get them to answer." Christian said that he would not describe himself as frustrated when students did not answer questions. When that happened, he merely changed his wording, or gave the answer himself.

At mid-semester, Christian did not describe his students' comments on the course evaluations, except to say that "it is quite clear how important it is to allow time to properly fill them out." He got "minimal results" when he suggested students review their graded quiz and write comments about "what was weird." The scores on the second quiz were even lower than the first, with many failures.

Repeating an observation made weeks before, Christian noted in several journal entries that he could not make universal assumptions about what students knew or did. "Different students and different classes will simply react differently to different things." On a day when he presented "some of the best content of the semester," he wrote that his fatigue made it difficult for him to discern "how effectively the ideas are coming across." Perhaps students "just don't like talking on Fridays."

In a class day shortly after mid-semester, Christian explained to his students that he had introduced the concepts of short- and long-term memory in a previous class, and that the day's focus would be on demonstrating them. For

the next several minutes, all students were engaged in a number of memory tasks that Christian projected on the Power Point slides. When he asked questions about their performance on tasks, many students answered immediately. After a multiple-item memory list, he asked, "You remembered a heck of lot more. Why? Can you put it into words what the big difference was?" When a student responded, Christian repeated and elaborated on her answer. Moving from the results of the tasks to the larger concept of grouping and memory, he then asked the class:

> Can you think of any other place, *in* school, *in* textbooks, in *social* life? *Growing up*, as your parents were trying to get you to remember stuff? Can you *think* of any other place where things were *grouped* together, in larger chunks, to try to make them easier for you? Have you ever seen places where people organize the content *in groups* to try to get you to remember more? More than just one item after another? Now they're in *groups*. Does this seem familiar?

No one responded for seven seconds. Christian asked whether textbooks grouped information. No one responded. He asked two related questions, and, when no one responded, he quickly opened a textbook page and asked how the textbook grouped ideas and words to make it easy for readers to understand. A student answered. "Indeed," responded Christian.

The day that Dr. Marcello observed his class, Christian said that "it was absolutely one of the best days he could have chosen. He got to see everything that I do at the start of a chapter, *and* my normal presentation style." In his subsequent debriefing, Christian said that Dr. Marcello noted that one class demonstration "was a little vague." To correct any confusion, said Christian, "I just explained it the next class, and it was fine."

The central issue of their conversation, said Christian, was how to address the poor quiz average in his class. The class average in the first two quizzes was a D, with several students failing. None of his students had come to his office to talk about their results. Christian said the grades on the first quiz were low because students did not read the instructions. Grades were low on the second, he said, because they did not read the textbook. He said that Dr. Marcello came to different conclusions:

> *He* said it was the quizzes' fault because the difficulty was too high. The strange thing is, though, last semester, I gave the students the same stuff, and they rose to the level where I set the bar. He didn't know what to make of it. He said that the sorts of quizzes I had been giving them were the sorts of things you'd want to give at the *end* of the semester, after you'd trained people into your way of thinking. The vast majority of the questions were more analytical, incorporating the *higher* levels of Bloom's taxonomy when, for an intro class, you kind of want the majority to be the lowest level.

This new understanding, Christian said, was "really helpful." "Conversations with [students], and analysis of what's going on, strongly suggest that [Dr. Marcello]'s right. It's just too difficult for them at this time."

Dr. Marcello gave him "a few different ways to look at the material, and so I've revised my questions." Within each of his teaching modules, Christian was required to include a "table of specifications" that classified question types appearing on that unit's quiz. Prior to his conversation with Dr. Marcello, he had divided questions into two categories, multiple-choice and short answer. In each category, he classified the number of questions that were "factual" or "analytical," and noted which relied on text (rather than in-class) material (Appendix C). Working with Dr. Marcello, he revised the specifications for the remainder of the

semester's quizzes. Retaining the primary categories of multiple-choice and short answer, he subcategorized the multiple-choice questions into "Definition," "Concept," and "Scenario," continuing to note questions that relied on text material (Appendix D).

With Dr. Marcello's assistance, he developed a plan for steadily increasing the difficulty of quizzes, beginning by "lowering" the analytical difficulty in the third quiz, something Christian had mixed feelings about.

> I hate questions that just ask you for the definitions of things. That's not what I'm teaching in *class*. I ask questions on more conceptual things because that's what I *tell* them in class. [Sighing] But more factual questions are a lot easier to do on a quiz. That's from the student's perspective. So I put a *lot* more factual questions in there on the main terms that they have definitions for in their notes. If they're studying, then the grades absolutely must be higher in this quiz. It cannot be the case that, after having *all* my fellow grad students look at my material, and having the head of the department correct things, it *cannot* be the case that the *entire* fault is mine.

In some ways, he wished student performance on quizzes *was* entirely his fault. If it were, then he could "fix it." "If it's *their* fault, then I *shouldn't* scale the grade because they earned the F." He had come up with every reason he could for the poor quiz performance. If changing the difficulty of quiz questions did not result in higher grades, the only option left was dropping quiz grades, something he felt was "ridiculous."

The results on the third quiz were dramatically different. "Changing quiz question selection practices to ask more low-level things really does work," he wrote in his journal. Although several students failed, the class average was higher. By Quiz #4, the class average was B, a profile, Christian told the seminar, that finally reminded him of the fall semester. He was particularly pleased that the

grade distribution was "bell-shaped." "It's looking much better." On the fifth quiz, grades were lower. This was because, said Christian, many students answered open-ended questions with material "I specifically said would not be on the quiz." He wrote in his journal that he needed to "make sure everyone . . . knows that I will not give credit . . . in the future."

Despite his willingness to craft revisions, and subsequent positive results, Christian was "distressed" that he had had to make the changes he did. He had made it very clear—in the syllabus, in class, in review sessions—that students needed to understand the larger conceptual framework of course topics. "They knew *full well* that's where we were going. But it didn't work." While he understood how lowering question difficulty resulted in higher grades, he could not explain why the subsequent increase in difficulty that he structured into the last four quizzes did not result in poorer results. The short-term fix had serious implications for the future. Now, he said, it seemed as though, for every class he taught, he would have to determine students' abilities to conceptualize and apply information before he created the quizzes for the semester—as opposed to using the quizzes he developed months before when he constructed his modules.

His effort to encourage text reading, the mini-quizzes before each chapter, had not been successful, as student performance was not good. The fault, he wrote, was not with his questions, but with the students.

> My attitude has been—and *possibly* always will be—if the students don't care, then *I* don't care either. If they do not want to show up to the quizzes, if they don't want to read the textbook, it's entirely possible that other things in their life are more important. I *can't* and *shouldn't* do anything

> about that. There's nothing I can or should do, which is why it's so depressing, because there's lots of evidence that they *aren't* studying. So I *shouldn't* have to help them. I've finally reached the extreme end.

It was very likely, he said, that students did not read the text because none were psychology majors.

In interviews, journal entries and seminars, Christian revisited the issue of student response. One of his primary objectives was for his class to become better students, and getting them engaged, talking, was one way to do that. At this point, however, his expectations were low, as he was working on the premise that "some bare minimum of questions is necessary to maintain student attention." He had resigned himself to adapt to the lack of student reading by asking questions based upon information he just presented in class, then asking students to apply it to their lives. These were, at best, "fluffy" questions, not "hard" or "intellectual." If students failed to respond, he said, "I can wait five seconds, and then give an elaboration or example on my own. I elaborate and elaborate and elaborate because I don't want them ever to get the impression that I'm just going to stop asking." He was usually "rescued" by one or two talkative, "healthy" students. The only thing that had surprised him about class at this point was the occasional time when students asked "good questions."

> The *entire* point behind my class presentation, class questions, class discussion, quiz questions, assigned readings—everything—*is* I want my students to apply the principles from the chapter. Thinking about stuff more than once, and thinking about it in more than one way, and making connections between items, and making connections to yourself.

When he brought up this issue in the seminar, Dr. Marcello asked him to stipulate whether students were reluctant to ask clarifying or inquisitive

questions. Both, replied Christian, which puzzled him, because simple curiosity about life should have made it easy for students to ask questions in psychology. "I think there's more to it than that," said Dr. Marcello, explaining the need for a level of student confidence before questions were asked. "The atmosphere in the classroom has to be *very* safe for students to ask *any* question." In a class of 50, many students would never feel safe.

When the seminar group met with the eight students of the next teaching cohort at the end of the semester in the "Fish Bowl" session, Christian emphasized the importance of creating a "system" for creating modules that could be reproduced. "After a while, you're just plugging away on what you find out worked once already. You just do it 12 times in a row."

Because of his ability to design modules and give presentations, he said in an interview, he was "pretty much self-sustaining." "I either have all the material, or I've figured out last semester where I'm going to need to go to revise the material." He came to teaching, he said, with an understanding of the "art of presentation." "As far as I can tell, all presentations are the same."

> Step in front of the classroom. You've learned the material beforehand, so do a talk on what you know best. [laughing]. After doing it once in [my] first-year talk [to the graduate faculty] *none* of these other presentations has been any challenge for me because *after* figuring out basically how you physically use Power Point, and how you avoid standing in front of the projector, and how the classroom is physically set up, what more do you need to do, aside from hoping that you don't get butterflies in your stomach? There's nothing else to do, until you start getting into more complex issues like whole class discussion. That required thinking.

Every audience was basically the same, he said. He was never concerned about his performance because he had practiced it at least twice beforehand. Not much

needed to be changed in his presentations from the fall semester because, by the end of the first semester, he had learned "the *extremely* limited number of things that I had no idea how to do in the first place." By now, he was confident that he possessed a competent "body of knowledge," so no longer needed to play "catch-up." While preparation continued to take time, his goal was to "get through" the Power point presentation "that already exists."

He was also certain about the lines of responsibility. He told the new cohort of teachers in the "Fish Bowl" that they should make course requirements very clear to students: "You need to come to class. You need to take notes. You need to read the book. You need to find the unifying themes. You need to see what the connections are in this content. Because I'm going to quiz you on everything." Beyond that, the teacher's responsibility stops. "I don't have time for them if they honestly don't care about my class."

Thirty-one of 50 students completed Christian's course evaluation at the end of the semester. These students expected to earn an average grade of C+ for the course. Over 80% felt that Christian had effectively presented course objectives, and that those objectives were reflected in course content. Ninety per cent felt he was well-prepared; almost 80% felt he was respectful to students; 70% believed he encouraged discussion questions. Fifty-three per cent felt he had presented course material effectively; 57% felt he was fair with students; 48% felt he graded in a fair manner.

Christian asked students to give written comments on what they had learned during the semester. "Good job," wrote one student. Several students

said they had been introduced to many different psychological concepts; others noted they had learned study and writing skills: "I learned how to write papers and cite them correctly." Four students complained about Christian's grading procedures, and three students criticized his presentation style. One student said that Christian's method of memorizing lectures was not effective, and rushing presentations to fit them into class time negatively affected learning. One student felt that Christian needed to improve on "how he deals with students," feeling that he was reluctant to answer student questions.

After the semester ended, Christian remarked in an interview that many assumptions he entered the year with about students had been confirmed. Before he became a teacher, he said, he realized that students new to the university were most often concerned about their grades rather than what they learned. While "there's always going to be different levels of interest in class," students generally do not want to "do any work that's not graded." Only occasionally will students find course content interesting, he said. Nevertheless, he said his goal was to "always" give material to engage students because they were likely to find something that interested them that way.

While students eventually develop a respect for their own learning, that attribute was rare, he said, among first-year students. "I don't think that undergraduate students are thinking in those terms, thinking about learning." The discrepancy between his goal of helping students learn and their goal of attaining good grades explained the results he got on teaching evaluations, he said. He was comfortable with that, and believed that his was one of the first experiences

students would have that would eventually change their attitudes. While not every student found his class enjoyable, at the "very least" he was able make some students "smile."

While the guidance he received from Dr. Simpson and Dr. Marcello was not "magic," said Christian, it provided him with valuable sources of information about teaching which he could apply in his classroom. Their most significant contribution was to his confidence. His three fellow graduate students served a less important role, although they were sometimes able to address "mistakes" he made in course materials.

Although he typically had no trouble expressing himself, Christian seemed to have difficulty answering a question about the impetuses that caused him to look critically at his teaching.

> Every time I had to take three paragraphs of content and filter it down into one [laughing]. Every time I graded quiz material [sighing]. Every time . . . . . I . . . discovered . . . Oh yeah! I actually found something that would have been better to put into class. Now I have to *create* new material that wasn't here last semester. . . . Difficulty . . . Content emergencies . . . Whenever I get to the point where, yes, right, this is the point where I've got Point A and Point C, but last semester I didn't have a good Point B. So now I'm going to replace it. And I've got to replace it tomorrow!

He seemed to have similar difficulty explaining how he was different as a teacher at the beginning and the end of the year. Several seconds passed before he answered.

> Ah . . . Hard time coming up . . . The only thing that's changed is that I I feel *affirmed*. . . . I *knew* going in that there were going to be difficulties in getting students to talk in class. I knew going in that I wouldn't take nonsense about cheating in class. I knew going in that I could do presentations [sighing]. . . . The *difference*, I suppose, is that now I know how much sleep I *do* have to lose. . . . Affirmed. Beleaguered. . . . I *don't* feel more efficient, which is the annoying thing, . . . because, if

> the whole point is things don't get easier, you just get better at them, . . . I don't think I'm any faster at all, because I'm not going to . . . I'm *still,* if I'm going to say something in class, I want to be sure that I'm saying something worthwhile for the students. So I'm going to sit there and think about the merit of what I'm going to say before I say it. I don't know how to do a B job. I don't know how to rush. And I don't want to. . . . Other than having a larger repertoire of things that I need to put in, things to help students with their learning—not grading. . . . I think I'm still the same presenter that I had been.

Analysis

In many cases, the fall seminar group reflected more elaborately than Christian did on his own, exposing a number of his assumptions to scrutiny. In what ways did Christian and the seminar respond to and reflect about those challenges in the spring semester?

"Fitting in" course material, a dominant focus of his fall reflection, represented a significantly lower level of concern in the spring, as it was rarely mentioned in his journal, and never brought up in seminar meetings. This is not surprising, given his sensitivity to management issues (like module and presentation construction) and his belief that he could, with some effort, successfully control them. He believed he was "self-sustaining" by the second semester because he had "figured out" what he needed to revise of his course materials. The significant reconstruction of his syllabus to include more review sessions and quizzes was an instrumental response to deal with problems (or deficiencies) identified the semester before. Although he did not report it as such, these changes may have been precipitated by seminar discussions about the importance to student learning of more frequent and varied assessments. In that sense, Christian was closing a first loop in the reflective process by acting upon

hypotheses. Telling, however, was his comment at the end of the semester that, despite his best efforts, he had not been able to achieve a desired level of "efficiency."

This was likely due to his lack of understanding about the role context plays in teacher action. The implementation of new activities in a new classroom environment inevitably resulted in a new set of experiences (a reality that "distressed" him). As in the fall semester, his relationship with students and their participation continued to be foci of reflection. Related to and not altogether missing from the previous semester's reflection was an unexamined concern about the structure of his quiz material.

Participation. Perhaps with a sensitivity growing from the previous semester, and unlike the hopefulness with which he opened the fall journal, Christian identified his new group of 50 students as relatively quiet as soon as the semester began. Nevertheless, he had constructed a new plan to consistently offer "interesting" content. At least occasionally, students would find something to engage them. As the end product of reflection (which he did not articulate), this solution to the problem of student engagement indicates an instrumental approach to what he seemed unable to frame as a very complex problem. His rapid assessment that the plan had a "limited life span" indicated that he was aware, at some level, of its ultimate uselessness.

The solutions he proposed revealed how he structured the problem in the first place (and, ultimately, why he was never able to come to a satisfactory solution). As King and Kitchener (1994) contend, "When the basic elements of a

problem are provided . . . and the problem can be solved with certainty, the problem qualifies as a well-structured one" (p. 77). In this case, a simple process of deductive logic is likely to lead to the solution. Christian structured the problem of participation, over and over again, in this way. It was caused by the fact that no one was a psychology major, by the time of day, or by the time of the semester. It was caused by students' lack of text reading, or their refusal to read the syllabus, to listen when he repeated how they should understand "larger themes" or take notes. It was caused, ultimately, by boredom. It could be solved by offering candy, or by speaking with students in his office, or did not need to be solved at all because he had done everything he reasonably could. This effortful, but ultimately instrumentalist way of framing is entirely consistent with the way many novice teachers cope with their new realities.

For example, while Christian made a significant change in the spring by engaging his students in an assessment exercise early in the semester, he assumed that what would result would be simple enough for him to address. Instead, after reading their responses, he concluded that students did not *know* what they thought about the class. Rather than apply their response to a detailed means/end analysis to determine a set of hypotheses he might then act upon, he instead questioned the usefulness of the data. He immediately concluded that he could do nothing about a situation for which students had radically different understandings.

When teachers assume that a linear and logical thought process is not, ultimately, useful in solving problems, when they accept uncertainty about their

ability to fully understand them, they frame issues as "ill-structured" (King & Kitchener, 1994). The resulting means/end analysis is significantly different from logical step-following. This is the approach to problem framing and solution taken by the seminar group under the direction of Dr. Marcello. Frustrated, perhaps, that he could not solve the problem of participation on his own, Christian brought the issue to the seminar early in the semester. As Dr. Simpson before him, Dr. Marcello described problems as manifestations of a variety of interacting factors, something that Christian did not often do—as illustrated in two ways. First, for example, Dr. Marcello asked Christian to explain what he had told students they should do in an upcoming review session. Christian responded, not by describing how he wanted students to behave, but by listing the rewards they would receive (Handy Snacks and chocolate). That is, Dr. Marcello was trying to understand the kind of response Christian expected, trying to discern whether he had communicated that to his students. Christian implied that he had not envisioned their response much beyond a simple lack of silence. In any case, he did not articulate the nature of their participation or its correspondence with his goals for the session. Because he went no further than to assume that reward would elicit response, he was stymied when it did not.

Secondly, as he had done the semester before, Christian responded to suggestions to investigate other factors of the problem by insisting that he had already explored them and found them lacking. For example, when Dr. Marcello asked whether he reminded students to read the syllabus, he replied he already had. To help address the issue of students not reading the text, Dr. Marcello

suggested that Christian give reading quizzes. He replied that he already was, and that it made no difference.

As in the fall semester, Christian's teaching behavior revealed connections between his presentation behavior and his class participation that were never subjects of reflective focus by him, his cohorts or Dr. Marcello (except, briefly, in the two class observations by Dr. Marcello). For example, class observation of post-quiz review reveals that he first methodically explained what students misunderstood in each quiz question. Then he asked students to pair up and tell one another what they did not understand. When he engaged students in activities, like compliance exercises or demonstrations, or when he asked them to talk about their experiences in those activities, students responded much more often than any other time. When he consistently explained how the textbook was wrong or confusing or inadequate, and then asked students to explain their understandings of the text material, almost no response followed. Although he sometimes mentioned a flurry of response following some class activities, Christian never examined the connection in any detail. His attention to class behaviors was very selective.

Influencing Christian's tendency to bifurcate his presentation behaviors from the participation behaviors of his students may have been representative of the environment within which he had operated for so many years:

> Higher education socializes individuals to view time and process in the same way it socializes them to view understanding and knowledge—as cumulative or linear bricks in a wall rather than as nesting and interacting frameworks coexisting in creative interaction. Thus, faculty learn to dissect the curriculum, the schedule, and departments and to view reality in neat boxes of a few independent variables in hypothetical relationship to

> several dependent variables. This distortion is honored in the name of science. Altering one approach to incorporate an awareness of the present moment radically changes the lens through which one views the world. Such a lens is critical if reflective practices are to be incorporated as central to the teaching/learning process. (Rogers, 2001, p. 53)

As the semester progressed, this inability to see connections may have influenced Christian's growing disbelief that his students *would* respond. He never considered that the way he conducted class may have contributed to the student behavior that clearly troubled him. Indeed, describing as "healthy" the few students upon whom he could sometimes count to respond indicates that he located the problem in their "illness," not his husbandry. It is not surprising, then, that this new teacher, after exhausting every hypothesis he could think of, began to believe that students controlled, and were responsible for, the factors that resulted in their participation.

That Christian reported so frequently about this issue, and shared his feelings with the seminar, indicated that he fully recognized the importance of coming to some resolution about his students' participation. As far as he was able, he made various attempts to rectify the problem. Perhaps his inability to do so was, in part, influenced by unexamined and closely-held assumptions he had about his relationship with students.

Relationship With Students. What assumptions contributed to Christian's attempts to use rewards like candy, or self-deprecating behaviors like bouncing up and down to emphasize a point, or wearing silly hats to solicit desired student behavior? Why was he continually surprised by his students' refusal to participate when he offered these gifts? Why did he, despite his growing frustration,

regularly speak in a friendly tone to his students and encourage them to publicly share ways in which psychological concepts interacted with their lives?

Christian's seemingly naïve response to their refusal indicates that he held paradigmatic assumptions about the ways people responded when offerings and friendliness were proffered (Brookfield, 1995). In Christian's world, people do not react to kindness or self-disclosure by silence or disrespect. He responded to their rebuffs by locating the cause in two very different places. As new college students, he surmised, they were at a developmental level where the value of participation was not yet recognized. As often, however, his responses indicated a belief that they had dismissed his class as unimportant, or him as incompetent (perhaps not realizing the two were not self-exclusionary). On those occasions ("I've finally reached the extreme"), he rather stridently described what he was not willing to do.

The "defensive reasoning" exhibited in this last response influenced Christian's ability to reflect upon the factors operating in his relationships with students (Brockbank & McGill, 2006). He may not have been able to articulate as a problem what he was experiencing. At any rate, he did not bring it to the reflective dialogue of the seminar, a place in which he might have safely participated "at the edge of [his] knowledge, sense of self and the world" (Brockbank & McGill, 2006, p. 57). It seemed that Christian was wrestling with the problem on his own, rather than framing it as an issue that could be examined within the relationship structure of the seminar. There, it might have become the property of reflective dialogue, "an event experienced by [group

members] in common, in which at least one of them actively participates, . . . [T]his one person, without forfeiting anything of the felt reality of his activity, at the same time lives through the common event from the standpoint of the other" (Buber, 1965, p. 97).

Christian's experiences reflect the primacy of unexamined affective factors in the very complex process of reflection. "Reflection may be influenced by the developmental situation itself, by factors within the individual, and by factors present within the larger environment. Thus, the reflective process appears most likely successful when both individual and context factors are managed so that the context provides an appropriate balance of challenge and support" (Rogers, 2001, pp. 43-44).

In order for Christian to make the conceptual change necessary to address the relationship issues he had with students, he would have needed to, as described by Bendixen (2002), engage in a reflective process that included a realization that his current beliefs were contradicted by the reality of his classroom situation, be able to understand and apply new ways of looking at the issue, and use them, not as end points, but as hypotheses with which to evaluate the next relationship challenge. This seems like a tall order to ask from a novice teacher who often framed his practice issues in the only ways he could—as instruments of survival.

Quiz Specifications. Christian perceived as a dilemma the confusion that his fall students expressed about his quiz language. However, their quiz performance was acceptable, so he was never prompted to address their

confusion much further. Nor did he anticipate the seriously deficient performance of his spring class on the first two quizzes. Although he expressed, characteristically, that the problem would "self-correct," he must have concluded upon reflection that misreading factored into their performance. He organized the post-quiz review session around an explanation of his writing style. He was nevertheless perplexed. His spring students were failing the same quizzes that his fall students had been successful at.

The precipitating factor of seriously deficient student performance--and his contention that he had explored "every reason" for it--prompted Christian to seek Dr. Marcello's advice. Although he did not completely agree with the hypothesis the senior teacher advanced--the questions were too difficult--he was willing to defer to the expert and experiment with the premise that revising them would have beneficial results.

Christian's reflection upon Dr. Marcello's hypothesis reveals a tension between the way his mentor framed the problem and the way he tended to. Theoretically, he understood the relevance of Bloom's taxonomy of intellectual development, and appreciated Dr. Marcello's assistance. However, he seemed to long for a different way of naming the problem, one that could be easily "fixed." Following close after this admission was an assumption common to all his reflection about student performance: the problem rested with them, and there was nothing he *should* do.

Perhaps some of Christian's reluctance to revise his quiz questions stemmed from his strong belief that he could manage course materials. Between

the fall and spring semesters, he had put significant effort into revising his modules, including the quizzes. As he had demonstrated often, his confidence in solving these kinds of technical problems blinded him to the possibility that, in a new class context, former solutions would not be appropriate. This would account for his troubled anticipation that he might never be able to assume that his quizzes corresponded with his students' abilities, or that, as long as he taught, he would be learning new lessons about teaching.

Christian's experience raises several issues about the nature of his reflection. The first is the role of the mentor. Dr. Marcello assisted Christian in the tentative adoption of hypotheses different from those he had posited. Instead of assuming the problem was rooted in student delinquency or inability, he supported Christian in a very complex analysis and revision of his quiz questions. As has been established, Christian's confidence was tied to his successful crafting of course materials. Under Dr. Marcello's mentorship, he not only suspended disbelief that revising the questions was worthwhile, but—and more importantly—suspended his feelings of incompetence at having to do so. Dr. Marcello was able to make conscious the tacit assumptions Christian had about the appropriate analytic level of quiz questions. This apprenticeship experience is representative of the mutual dialogue operating within Schon's (1987) conception of the "reflective practicum."

Second, movement from one reflective stance to another indicates that Christian operated on more than one level of reflective judgment as he negotiated this problem. He initially responded to the low grades with a certain,

though perhaps not immediately attainable, answer. This view of the certainty of knowledge is characteristic of a pre-reflective stage of thinking as described by King and Kitchener (1994): "Knowledge is assumed to be absolutely certain or temporarily uncertain" (p. 56). Christian believed that, among the many reasons he could think of for his students' poor performance, at least one could be identified as the cause. Confusion arose after the results of the second quiz, the point at which he needed "make decisions without absolutely certain knowledge and without understanding that belief and evidence are separate entities that must be coordinated in the process of justifying beliefs" (p. 57).

As he worked with Dr. Marcello, Christian's stance changed. With his mentor's assistance, he was able to operate on a "quasi-reflective" level of reasoning. Not knowing for sure whether Dr. Marcello's "answer" to his problem was appropriate, he nevertheless experimented with it. After he had "proof" of its relevance, he was able to justify his revisions based upon his adoption of Bloom's developmental theory of cognitive development.

Embedded in the first two observations is the third. As Christian reflected with Dr. Marcello, he did not progress linearly from one premise to the next to arrive at a conclusion. More accurately, he simultaneously adopted one idea and held on to an antithetical one. For example, though he did what Dr. Marcello had asked, he was "distressed" at having to do so. Though he admitted that student performance improved, he was not entirely sure why. While he had concrete evidence that simply telling students how to study did not seem to work, he

expressed disbelief that students failed while knowing "*full well* where we were going."

The result of reflection is changed beliefs and understandings. This new mindfulness affects the way future events are reflected upon (Rogers, 2001). As Christian's experience indicates, however, a more accurate way to characterize reflection is to see it, not as the acquisition of new insight, but as engaging in the ongoing process of learning. During the first and second semesters, Christian felt that he had successfully "covered" all the content areas he intended. However, he did not feel as confident about his ability to include the variety of teaching strategies that he had learned about in his Preparing Future Faculty courses and the practicum, especially the first semester. Although he used demonstrations, classroom assessments, exercises, and group work, Christian often expressed frustration at his inability to include strategies that might help his students learn.

> The need to fit in what I needed to for the students was being frustrated in one way or another. In the first case, I had to wait for the first class to begin or I couldn't do anything for the students, because I didn't know who they were. And in another case, after I've created all these modules, I hear these wonderful ideas that I feel I could do, and therefore would do, but it's too late now.

CHAPTER VII

JULIA

Coming to the Third Year

Julia graduated with an undergraduate degree in psychology from a small liberal arts school in Ohio in 2003, the same year she entered the doctoral program at the University of New Hampshire. Teaching rather than research was the faculty focus on the Ohio campus, she said. She was influenced to continue her education in psychology by a professor who advised her, early in her undergraduate career, to begin planning for her Graduate Record Exams and researching institutions. This forward-thinking approach, she said, was consistent with her self-described proclivity for setting goals and meeting them.

Before she acted, Julia thought about the career paths best suited to her degree and her personality. She had little interest in counseling or teaching in public school. College study, however, was something she was comfortable with. "I know how to be a student. I think I can do well being a student for a little longer." An independent study on language led her to a research focus on cognition—specifically, memory, reading, and language processing.

Financial and location reasons influenced her decision to "travel east" and begin a doctoral program at UNH. She was attracted to the program's teaching

focus. "Why not go to a program where the research is interesting to you and you might learn something about teaching? If you're going to teach, then you might as well make sure you're good at it. You might as well make sure that you have some experience in the right and wrong methods."

By the spring semester of 2006, she had completed several courses in college teaching offered through the university's Preparing Future Faculty Program: "Academic Citizenship"; "Issues in College Teaching"; "Cognition, Teaching, and Learning"; "College Students and the Undergraduate Culture." Concurrent with her doctorate in psychology, Julia intended to complete a master's degree in college teaching offered through the university. She presented her research in language, learning and memory at three conferences.

During her first two years in the Durham program, she served as a teaching assistant for two psychology faculty, and was able to do a little classroom teaching. Her advisor believed that faculty should pursue both research and teaching with rigor. As Julia worked in her advisor's laboratory, she combined her teaching and coursework with a substantial research schedule. She spent 20 or more hours a week at the psychology laboratory conducting experiments on reading and reaction time with undergraduate volunteer subjects. "When I'm not teaching, I'm there doing research."

Ultimately, Julia would like to secure a faculty position in cognition and work her way up to an administrator's position, though she described her future as "uncertain." She doubted that she would have the "stamina" for post doctoral work, and was not attracted to a research-heavy position.

Several months before Julia began teaching Introductory Psychology, she drafted a teaching philosophy for a course on college teaching. She wrote that her current beliefs about teaching and learning emerged largely from her experiences as a student, and that she fully expected them to change as she gained experiences as a teacher. A central teaching goal, she said, was "to break traditional barriers between teacher and learner that are all too typical in many academic environments." To that end, she hoped to establish a community of collaborative learners, one in which "shared meaning" was constructed by participants. To accomplish this, she intended to "set a zero tolerance policy for discrimination of any kind" by insisting that everyone's ideas would be respected. To connect with students, she intended to share appropriate aspects of her personal life. This, she hoped, would encourage them to do the same. Finally, she intended to "balance traditional teaching methods with intervals of active learning," while adhering to the "teaching values of my institution."

A major impetus for change in her philosophy, she said, would be the assessments she made about her students' learning. Assessment of her teaching would mirror the principles outlined by Barr & Tagg (1995), which define excellent teaching in terms of the promotion of effective learning. Effective learning, she wrote, was actualized when students were engaged, and she intended to assess the success of her teaching by measuring her students' active learning. As a cognitive psychologist, Julia said, she was familiar with the principles of active learning, which she described as the ability to recognize

connections between "prior knowledge and new experiences," and to reflect upon those connections.

> I am well aware that my statements on teaching are dynamic, and developing a true philosophy is a life-long work in progress. As I face the challenges of adhering to the above statements on teaching and learning, I trust that I will learn much about my strengths and weaknesses as a teacher. Especially in the first few years, I will be just as much a learner as I am the teacher. Throughout this process, I desire most to create an effective learning environment that is both engaging and comfortable for my students.

The Fall Semester

Narrative

Julia said that she entered her teaching year with some confidence about her ability to organize materials and present them publicly, as she had several undergraduate experiences where she was called upon to speak to large groups of people. As well, she believed that her education in psychology had given her "a feeling for how people learn best." What she was concerned about was "being competent, giving [students] what they *should* have, what they paid for, making sure they come out of it knowing something." The many courses on college teaching she had taken had "flooded" her with ideas, but she was a little uncertain which ones would be appropriate for her new experience as a teacher. "What parts of what I'm doing are already okay? What new parts am I going to try? You're constantly reshuffling the deck." Nevertheless, she regarded herself as a naturally reflective person who considered carefully whatever action she took. This inclination to think about what "students might want to learn," combined with a "passion" about teaching, were important assets, she believed.

Julia described her fall syllabus for Introductory Psychology as "contract," a document that described both her and the students' responsibilities. Her general course goal was to present a "broad overview" of psychology. "We will explore" the field "together"; that is, both she and the students would be learning. Course objectives included that students would learn psychological concepts and theories, become "informed consumer[s] of psychological information," and become synthesizers of information from a variety of sources. She wanted to create "a collaborative learning environment in this classroom." To accomplish this, she would be prepared for class, learn students' names, and attempt to make the class both enjoyable and a place where students would be challenged to critically evaluate the information she presented. For their part, they should complete assignments, actively participate in class, and treat every class member with respect.

Once weekly, students would submit a written response to "thought questions" she posed about class material. They would write four, two-page papers, participate in four laboratory experiments conducted by the psychology department, and complete five exams.

Julia described her fall course make-up and goals in greater detail in the teaching portfolio she completed the following spring. Mirroring the syllabus, she wrote that her general course goals were to provide a broad introduction to psychology and relate the concepts to students' lives. The success of these goals, however, rested upon her ability to excite her students, something she

intended to do by using a variety of active learning techniques to apply principles from the text.

These techniques would be the locus of the assessments she made to determine the success of her teaching. Under, "Innovative Methods for Teaching & Learning," Julia described and justified her teaching methods. Laboratory experiences, for example, would "expose students to various research methods used in a variety of disciplines in psychology." She would employ "mini-assignments," short writing and discussion activities to promote active learning both in and outside of the classroom. In one assignment, students were directed to the San Francisco Exploratorium web site, where they were instructed to execute two memory exercises. In another activity, students negotiated a website that explained the important events in psychology occurring around the year of their birth.

Under "Non-Graded Teaching Methods," Julia justified the course components that contributed to the development of a "reciprocal learning environment." The use of classroom demonstrations and activities, for example, would engage students by giving them personal experiences that they could use to make connections with course information. Supplying students with outlines of her lecture material would give them a "roadmap" with which to negotiate the class session.

Julia wrote journal entries on a weekly basis. Despite her conviction that she was well-prepared, she admitted to first week anxiety in her opening entry. While the class times seemed to speed by, "the preparation and anxiety made

the week feel like one of the longest in my life." In the next sentence, however, she said that she believed the teaching experience would be "beneficial." She was both "overwhelmed" and looking forward to the next experience. After the first week, she said nothing more about anxiety. Instead, she noted that she was becoming more sensitive to her "patterns of speaking and individual habits" and the facial expressions of her students. "I am interested in how these feelings and perceptions will continue."

In the first seminar session after classes began, Julia responded to Dr. Simpson's invitation to talk by announcing that she had a "teaching dilemma." In a small but serious voice, she described how the facilities crew began running lawnmowers outside her class window. The noise threatened to disrupt her class. "That's definitely a dilemma I didn't think about," she said.

The seminar topic for the day was the use of class discussion. Dr. Simpson listed on the whiteboard what the group offered as advantages and disadvantages of the technique. Could teachers avoid alienating less talkative students, Dr. Simpson asked. Perhaps "participation points" could be used as an incentive, Julia proposed. Are there disadvantages to this idea, Dr. Simpson asked, and the group discussed this point. Julia was the first to respond when Dr. Simpson asked for the reasons class discussion might be used. "It's more engaging than just lecturing," she said. When students are engaged, "they're going to be more apt to learn, process, and remember." Dr. Simpson nodded and said that, before they used class discussion, they should assess its relevance to their course goals, an observation she made twice more that session.

After discussing the rationale for discussions, the group reflected on ways to design them to meet course objectives. Julia suggested that it might be useful to have students "focus on some component of their reading and form an opinion." At Dr. Simpson's urging, she explained that she required her students to read sections of a controversial issues book. These readings, she explained, became the basis for class discussion. Her purpose was to create an environment where students felt comfortable sharing their opinions and where those opinions would be subject to critical analysis. Although this was her plan, she said, she had not yet used discussion.

Christian expressed some despair about his ability to fit different teaching methods like discussion into his classes. He shrugged his shoulders and said that it "looked like" he would have to adopt a "sampler approach" and offer different methods in different classes. "I don't think that there's anything wrong with mixing and matching what you're doing," said Julia. "I don't plan on doing big blown-out discussions for every topic. I don't see that as a problem for you, if you decide to do different things that's going to keep them more engaged."

As the discussion moved to the dynamics between teacher and student talk, Julia said that she had become very sensitive to what was going on as she taught. Being aware of her surroundings was one of her dominant characteristics, she said. As she interacted with students, she tried to be aware of the situation. "Are they attending to me? Are they somewhere else? What's going on?" Because of this, she was beginning to sense when, in her anxiety to fill silence, she left too little time for her students to process answers to her questions before

speaking again. "I think that will be a challenge to just be a better listener and to not feel like everything needs to be followed up with a comment or clarification from me." It had occurred to her, she said, that students needed time to process their answers. When students were engaged with a critical question, it may "stop them in their tracks."

Although she did not speak up often in seminar, Julia invited in a subsequent meeting the group's reactions to an idea she was contemplating. She was thinking about giving students a feedback form after their upcoming test. The group discussed the best time to give such an assessment. Besides seeking advice, she sometimes made suggestions when a group member solicited ideas. For example, Marcus described to the group his concern about a student who had missed several classes. Julia asked whether he had invited him to meet outside of class. When Marcus described his concern about a student with deficient writing skills, Julia suggested he advise her to seek assistance at the university writing center.

Besides soliciting and seeking advice, Julia occasionally referenced the advice given to her by Dr. Simpson. She explained to the group that, the previous summer, she had conferred with her about constructing rubrics to aid and assess student writing. Based upon that conversation, she had developed a successful rubric for her course. As well, Julia credited Dr. Simpson with giving her useful ideas for designing modules that integrated old and new material. Because of this, she said, she had been able to, in a recent class, integrate a number of topics.

> I was really proud of myself because I talked about social psychology, personality and our biological rhythms all at the same time, reminding them that we would be talking about some things in the future. You're constantly meeting the needs of your students because you're bringing them in if they lost touch. It becomes a lot easier than I thought to do that.

By her third week of class, Julia wrote in her journal that she had "reached a normal rhythm; that is, getting used to teaching and feeling more comfortable." Students had responded well to lectures and discussions. "I feel as if I am connecting with most of them on a variety of levels." She gave students a learning styles inventory and a "mini-evaluation" that assessed her class behavior and materials. "I hope to bring up their comments/suggestions to the entire class."

In the 26 completed evaluations, all but five students said they had been keeping up with text readings. Most students indicated that they "seldom" or "occasionally" asked questions or commented in class. While several students indicated that they did not openly participate because they were shy, 11 indicated that group discussions and activities would encourage them to do so more often. Students cited the lecture outlines, Power Point slides, and class activities as elements that aided their learning. Thirteen students found nothing about the class that they disliked. Others indicated that they sometimes felt rushed in taking notes, that they disliked "lectures without Power Points," or that there was a great deal of information to remember. While 15 students did not respond to the question about how the class could be improved, others suggested that Julia should make the Power Point slides available electronically and conduct more

discussions. One student said the class would improve if "more of us were willing to talk/discuss."

Julia reflected on her students' apparent "addiction" to her use of Power Point slides:

> In my class feedback, many students say they are less likely to follow me if I am lecturing from notes and not showing them any illustrations. I can understand that it is different for students when they have been taught heavily with this method. It seems like their ability to discriminate important points in lecture is a skill of advanced learning. I try to push them in this direction, acknowledging that Power Point can be helpful, but it cannot, and I will not let it, dictate all of my lectures. I find this issue to be a challenge, and I imagine my approach will depend on one particular class of students.

Immediately after grading the first exam, she began to assess why her students did less well than she had expected: "Did the students prepare? Did I prepare the students? Was the exam fair, too difficult? Was there a good mix of questions?" It was possible, she said, that, as a result of the exam, some students might change their positive attitude about the class. In any case, she wrote, "I will use this first exam as a learning experience."

Her concern about student attitude was concomitant with a growing sense of how difficult it was to engage students in discussion. She noted that this might be the "most difficult aspect of teaching." First, she described the evidence that students were not easily led into a discussion, saying that, although she had tried various methods, only a "select few" regularly participated in open discussion. One the other hand, she said this should not be interpreted as lack of class engagement, as even the non-speaking members of class seemed "alert and interested in my teaching." She wondered if she should have adopted a

participation grade. Perhaps, she wrote, her own inexperience in leading discussion was a contributing factor

Two weeks later, Christian shared a concern that mirrored Julia's. After a recent quiz, he had invited students to share their questions and concerns, but they seemed disinclined to do so. That had been her experience as well, said Julia. She had even contacted Dr. Simpson about it. Rather than give her feedback she could use to make changes to quizzes, many of her students responded by saying that she was the teacher and they did not know what kind of recommendations to make. "That's your job," they said. Julia posited that asking students to provide feedback on an exam may have been beyond their cognitive and emotional capabilities.

Echoing a comment she had written in her journal, she told the seminar that, despite student reluctance to comment on the exam, she could not fairly describe her class as unresponsive. In fact, a student who had slept through the first few classes had suddenly "turned around," coming to class and participating. "He works well with personal connection," noted Dr. Simpson.

Student participation, Julia said, was something she was continually monitoring and interpreting.

> You're looking for . . . it's like that light bulb. You want to see students engaging in some way. They don't always have to talk. They don't ever have to talk, because some of them will choose not to. But there has to be something going on. You have days where something's going on, and then you have days where nothing's going on anywhere in the classroom.

When that happened, she said, she acknowledged it by rephrasing her explanations. She recognized the need to do so when she saw "confused,

anxious faces." She was learning that students responded in different ways, and that some were more comfortable speaking with her one-on-one than in the large class group.

In the seminar focusing on active learning strategies, Julia said that she always assessed their appropriateness to the learning goals she had for her students. To do that, she engaged in "thinking" about the ultimate purpose of the activity. "Is this purposeful, or is it me trying to fill some void [students] need for entertainment?" Dr. Simpson agreed that the use of active learning techniques must be tied to course goals, an assertion she had made many times before.

On her mid-semester student course evaluations, Julia received an overall rating of 4.50 out of a possible 5.0, with very little difference in score among the 13 ratings. "Showed respect for students" was rated the highest, but the score was only .32 points higher than her lowest score, "Graded in a fair manner." "She presented the material in an effective way!" wrote one student. "Really enjoy her as a teacher, does well teaching information and helps us relate to it. It's my favorite class," wrote another.

Two weeks later, Julia described in her journal a worry about her personal presentation style that she had not mentioned since the beginning of the semester. This was precipitated, she wrote, by what she perceived as the increasing lack of student participation. Noting her sensitivity to "all the things I do that bother me about my teaching," she nevertheless described as a problem her overuse of certain words. She also sometimes spoke in very long sentences "without taking time to pace myself and breathe." The reason this was a concern,

she wrote, was that it may have interfered with her students' ability to understand what she was trying to convey.

In a subsequent entry, Julia describe how, as she conducted class, she got the feeling "that something wasn't clear. I simply was not making sense."

> It is a time like this when I try to read my students' faces. I usually see smiles and nods, even when I sense that something is just a bit off. It's really difficult to tell for sure. I may ask the students if they have questions. Usually, I get no response. Next, it seems to help if I have them pair up with a partner to discuss an issue. Some catch on with this, but others seem annoyed. I think next semester I will have to poll for some anonymous feedback on these issues.

Her perception that her class was not as engaged as she would have liked came again with the journal admission that she was "really bothered by the lack of participation in my class." Everyone *seemed* comfortable. Students talked easily with one another in small groups. However, when she solicited whole class participation, only a "small group of students" consistently spoke up. While she realized the reluctance of some students to speak publicly, "it frustrates me, as I believe vocal participation is a component of active learning." She did not explain what she would do, but wrote that she would "implement something" the following semester to mitigate this problem.

In a subsequent interview, Julia said her frustration grew out of a belief that, "at this level in college [students] should be responsible for articulating something." Unless students spoke up, she could not be sure how active their learning was. "I think learning is a process, of course. I just want some measure of that from the students, be it through email if they have a question, or if they

come to me. But vocal is the best way for them to say something, and then say something to their peers."

In the seminar session focusing on the use of classroom assessments, the group considered the difficulties of finding the time to regularly ask for student feedback. Julia offered no specific opinions about these difficulties. Instead, she said that having students reflect on the class was "directly connected" to their learning. As well, she said, the use of such assessment might create a new "generation of difference"—teachers who continually think about their teaching.

In the next seminar, Dr. Marcello came to talk about the change they would make to their course the following semester. Stacey first outlined her plan to include a service learning component. Marcus described a more culturally diverse focus. Christian explained his reorganization of class materials. Unlike all the others, Julia had written out several pages of what she described as a "self-reflective monologue." As she considered Dr. Marcello's request to make a major course change for the following semester, she explained that she first attempted to reflect upon her teaching behavior.

> Of course you have to look at it that way in order to make changes. First I started off with an observation. What is it that bothered me most about my teaching? Two things came up right away, one dealing with the amount of material that we are trying to impart to our students. Secondly, why am I so terrible at engaging my students in a discussion? It's something I didn't think about until I was in the situation over and over again. I *thought* I would be better at it than I actually am. Making these realizations, I think, is important.

Dr. Marcello interrupted and said that engaging students in discussion was one of the most difficult teaching tasks. It was difficult, Julia continued, to disengage herself from the image of a teacher standing in front of a classroom. "You're so

latched onto standing in front of them. *That's* how you feel when you first start. You're really worried. How am I going to look? How am I going to sound? How am I going to interact? You lose sight of this whole process of engagement, even though we all buy into that." Since engagement was a major teaching goal, she needed to recommit herself to accomplishing it. That is, rather than dwell on what she had described as her unmet goals, she needed to formulate ways to realize them.

This she did, she explained, by first focusing on her course objectives to expose students to general psychological concepts and to relate that material to their experiences. "I can teach them a module on memory, but how is it going to relate to *their* experience of improving their memory or what it means to them? I do a good job in always trying to bring out personal relevance for the student, but what is this general thing I'm trying to teach them about memory?" To explore ways that she could address this issue, she had sought Dr. Simpson's advice about what material was most important. She wanted "to worry less about getting through all these different things and to really integrate discussion, which will accomplish both of the goals." She constructed a hypothetical way this might be done with the topic of stage theories of development. Instead of an exhaustive review of all of them, she would concentrate on presenting one "really well, and emphasizing why is it that developmentalists study children and adults through stages." By using this process of "re-looking" and "re-analyzing" her course modules, Julia explained, she believed she could arrive at a single unifying message that students could understand. This new approach would require "a

new way of thinking and teaching." She intended to reduce "teaching/lecture days" and use the extra time for the class activities that they had all agreed should be central.

Her second course objective, Julia explained, was for students "to learn to be informed consumers of psychological information." While she had intended for that to occur as a result of writing assignments, "it didn't work for me the way I thought it would," based upon the results she got from students. After reflecting on her course goals and objectives, explaining how they were not achieved, and speculating on reasons why, she decided upon a new plan of action. This included regular reading and writing assignments, relevant to students' lives, that would form the basis for class discussions led by designated students. "I realize," she said, "that this is going to take a lot of meta-teaching and some coaching for students who have no idea of what they'll be responsible for when they come into class," but she was prepared to give them the guidance and resources they needed to succeed. The plan, she felt, made students accountable for their own learning and that of their classmates.

This new plan, she said, originated from her strong belief that learning was compromised when students expected the teacher was solely responsible for what occurred in the classroom. This "teacher versus student dichotomy," she explained, negatively affected the active engagement she believed was necessary for learning to occur.

Dr. Marcello asked Julia to give an example of how she would manage to accomplish her plan in a class of 50 students. She responded quickly, outlining

the ways she would size discussion groups, and the responsibilities of student discussion leaders and participants. In response, Dr. Marcello described a similar technique he used successfully in a class of 60 students. To Julia, he said,

> Julia, this is consistent with the natural evolution in your teaching, it sounds like. It'll be an interesting experiment for you. You never know. You may revert back to being, to doing something that you formerly did, but you should never feel discouraged, because you may also find that it didn't work quite right, but it worked out better than you thought. That's why I think it's a good exercise. It forces you to do something. You may not like it, so then you know what not to do. That's great.

Marcus said that another benefit was that students, because they were responsible for discussions, might better empathize with the difficulties their teachers had trying to get students to participate. "It's a terrific point," said Dr. Marcello. "It's like you're creating a culture. The culture is talk and contribute and don't just be passive."

In her next journal entry, Julia noted, "My students are very preoccupied with their grades." Not only was this "frustrating," she wrote, but it appeared they counted as important only the material they would be tested on. This was evident because, "even though I make a special effort to remind students," they regularly missed test items that originated from assigned reading not covered in class. "I would like to think about this phenomenon just a bit more to see how I can better engage and prompt my students for their learning." She was a bit "overwhelmed" at the new interest to talk about grades, she said, considering so few students had taken advantage of her office hours all semester. "I remind them, I think, after every class, and yet it seems like an illusion to them."

The last class day of the semester, Julia revealed something that she had not told her students previously—theirs was the first course she had taught. At first no one said anything. Then "they clapped." Two students emailed her afterwards and said "they would have never known."

The overall rating of her teaching on end-of-semester course evaluations was .35 points higher than that of the evaluations at mid-semester. Students gave the highest score possible to "fair with students," and almost perfect scores to "objectives clearly presented," "well-prepared for class," "showed respect for students," and "graded in a fair manner." "She made the class a comfortable learning environment," one student wrote. Another said, "[Julia] is great at trying to encourage class discussion; however, this class is not responsive." Another wrote, "[Julia] was not only an excellent instructor but was readily available to students outside of class to offer help/support."

Analysis

In seminar, Julia spoke less often than Marcus, Christian and Stacey. While she sometimes offered advice about others', she did not bring many "teaching dilemmas" to the group. Nevertheless, an analysis of seminar interactions, interviews, her teaching journal, student evaluations, her teaching philosophy and her teaching portfolio suggests that Julia was reflecting about her teaching behavior in complex ways. The most significant area of reflection was student engagement.

Engagement. What "felt difficulties" about student engagement did Julia identify? How did she describe problems? What did her reflective process look like? What

does her reflection reveal about the internal and external influences that informed her thinking?

The locus of Julia's felt difficulties might have been predicted by what she identified as her core teaching beliefs. As a requirement for "Issues in College Teaching," a course offered by the university's graduate school, Julia completed a draft of her teaching philosophy several months before she taught. There, she identified collaboration between teacher and student as the indicator of the "reciprocal learning environment" that she believed was necessary for learning to take place. She believed that evidence for this learning was student engagement, an undefined but, apparently, assessable behavior.

Evidence for Julia's belief in the necessity of engagement was found, not only in the philosophy statement, but more importantly, in her behavior. Class discussion, she said in seminar, was more likely than lecture to create "student engagement," and, if students were engaged, "they're going to be more apt to learn," "process," "remember." When she advised Christian of the value, no matter how they were organized, of active learning experiences, she did so because of their potential to engage students. She employed a number of strategies to encourage student engagement: constructing lecture outlines; writing assignments, discussions, demonstrations, in- and out-of-class activities. When she analyzed her fall course in the teaching portfolio, she echoed the beliefs expressed in her philosophy: her success as a teacher was directly related to student learning, student learning was a factor of engagement, and

engagement could be assessed. It is no wonder, then, that Julia framed as problematical what she perceived as compromises to engagement.

Although it follows that Julia would consider these compromises especially significant, the way she described them reveals that they were not framed as failures or simple problems. For example, the only time Julia used the words "teaching dilemma" was in the beginning of the semester when she described noisome lawn mowers. Most often, she described behaviors that may have been lack of engagement. She did not classify these behaviors, necessarily, as evidence of a simple problem. For example, when she described her students' "addiction" to Power Point, a potential compromise to their engagement, she first posed reasons for this behavior. Rather than coming to a summative judgment, she indicated that this was a "challenge" that she would think further about. She was "troubled" when only a handful of students actively participated in discussion, but fell short of calling it a "problem," perhaps because she also noted that the entire class seemed engaged. She countered her remark to Christian that her students did not give exam feedback by saying that this did not indicate a wholesale problem with engagement.

Nevertheless, it appears that Julia became increasingly disturbed about student engagement. Despite evidence that most of the class was silently engaged, and was working well in small groups, despite the overwhelmingly positive evaluation feedback she received that students believed the class enhanced their learning, Julia noted by mid-semester that she was "really bothered" and "frustrated" because she believed that what she had observed

might compromise her ultimate goal, student learning. One again, however, this was tempered with the belief that her students seemed comfortable and participated in other ways.

Two characteristics of Julia's language and thinking relative to engagement are telling. Rather than assume a well-defined problem, she engaged in a continual process of analyzing a number of conflicting observations, a behavior that seemed to define the problem as a complex one—so complex, apparently, that the positive feedback she was receiving was not enough to convince her otherwise. Such a deep analysis of the nature of a problem is not characteristic of novice teachers, who are often quick to attach themselves to a problem frame in order to gain some temporary certainty (LaBoskey, 1995). As well, Julia rigorously sought to gather evidence. Throughout the semester, she analyzed, even at the moment of teaching, the ebb and flow of student engagement. "Are they attending to me? Are they somewhere else? What's going on?" She looked for "a light bulb" on students' faces, even if they were not talking. She looked for "confused, anxious faces." As well, Julia purposefully constructed means from which she would get feedback. She was required to give students a mid-semester course evaluation, but opted to give an additional one (containing several inquiries about their participation) just a few weeks into the course.

Those who operate at this level of thinking illustrate Dewey's (1933) concept of intelligent action, "a complex set of flexible and growing habits that involve sensitivity, the ability to discern the complexities of a situation,

imagination that is exercised in new possibilities and hypotheses, willingness to learn from experience, . . . and the courage to change one's views" (Bernstein, 1971, p. 222).

The second, and related, characteristic concerned the locus of the problem. Just as she did not simplify the nature of engagement, neither did she locate it conclusively in any one entity (MacKinnon, 1987). Although she considered many factors that contributed (student shyness, her speaking style), Julia never identified as single "causes" characteristics about herself or her students. Her attempts to determine what was "going on," to understand the complexity of the issue by investigating the actions of the "people involved," contrast her behaviors with more instrumental problem-solvers.

> The reflecting practitioners defined problems within the dynamics of an interaction with the problematical situation. They sought to know as much as possible about the problem and what clearly defined its unique parameters. It is not through a simple act of naming and framing, but rather with a dynamic, ongoing interaction with the situation, that the problem takes on life and becomes constructed in a way to be addressed. (Ferry & Ross-Gordon, 1998)

Julia did not so much construct a "frame" as bring into question the nature and causes of engagement, and the ways it would be defined as problematical. She demonstrated an ability to embrace uncertainty as the impetus for her inquiry. Those who reflect in this manner

> take on the role of inquirers; they are agents involved in constructing knowledge. They see that the process is an on-going one in the sense that time, experience, and new data require new constructions and understandings. They are aware that their current knowledge claims may later be superseded by more adequate explanations. At the same time, they are able to claim that the conclusions they are currently drawing are

> justifiable. . . . They often argue that the process of inquiry leads toward better or more complete conjectures about the best solutions for ill-structured problems. (King & Kitchener, 1994, p. 70)

To a new teacher, this stance is fraught with danger. The way Julia perceived the interaction of these factors may have influenced her behavior. She did not define her "mission" as managing students or content, or engendering student favor. Instead, as she declared many times, her goal was to create an environment that met their needs as learners, an uncommon goal of novice teachers MacKinnon (1987). This allowed her to set aside many of the emotional factors that contribute to what new teachers reflect upon and how they reflect. Secondly, entailed in Julia's "conscious choice to be mindful" was the assumption of action (Rogers, 2001, p. 38). Thinking about engagement was useful only to the extent that it informed future teaching behavior, as evidenced by her subsequent revision of the course.

It is impossible to identify all of the factors that contribute to the reflective process individuals engage in, as what informs reflection is, more accurately, the complex interaction among the nature of the experience and the teacher's own development (Dewey, 1933; Boud, Keogh, & Walker, 1985; Mezirow, 1991). Nevertheless, some influences may be identified.

Julia self-defined herself as very "analytical," someone who vigilantly observed her environment, actively constructed meanings about what was going on, and assessed the actions she would take to respond. She described how she planned her entrance to graduate school, how she made the decision to seek a career in higher education administration, and, throughout the semester, how she

analyzed her classroom from the perspective of future action. Julia's deliberative reflection was an ongoing response to her situation, an integration of "the understanding gained in one's experience in order to enable better choices or actions" (Rogers, 2001, p. 41). This internal motivation to reflect about and act upon one's environment indicates an "intelligent processing ability" characteristic of some, but not many, novice teachers, teachers who seem driven by a "will to know . . . [who are] always on the lookout for something better" (LaBoskey, 1995, p. 30, 31). These reflectors value open exploration and continued growth, and engage passionately with their situations.

Personal characteristics like these do not reside "within" the individual. Rather, they exist as responses to the larger "learning milieu" within which teachers operate, and represent "the totality of the human and material influences which impinge on learners in any particular situation" (Boud & Walker, 1998):

> The context in which we operate has many features which are taken for granted and are normally invisible on a day-to-day basis. These features have a profound influence over who we are, what and how we think and what we regard as legitimate knowledge. These features include the . . . language we use to name the world . . . ; the assumptions we hold about ourselves and others . . . ; what is acceptable and not acceptable for us to do and what outcomes it is reasonable for us to seek in any given situation. . . . These wider features of the context of learning reach deeply into the ways we view ourselves and others. They impinge on our identity and influence the ways in which we relate to others.

In Julia's case, this "totality" included her own beliefs and understandings about the nature of learning, beliefs that were likely reinforced by her scholarship in the nature of memory and retention. As a college student in psychology, Julia would have been influenced to adopt the assumptions she did about learning. As a

student of several university courses in college teaching, Julia was continually exposed to ideas about learner-centered classrooms. The seminar readings and discussions about the importance of active learning mirrored her assumptions. As well, the positive reinforcement she received from Dr. Simpson and Dr. Marcello about her efforts to create collaborative learning meant that her behaviors were encouraged by expert mentors. Finally, the overwhelmingly positive feedback she received from her own students, both in classroom behavior and in course evaluations, must have confirmed that she was engaged in a worthwhile enterprise.

The Spring Semester

Narrative

Julia's spring syllabus reflected the changes she described to Dr. Marcello and the seminar group in the fall. She justified those revisions in the teaching portfolio submitted at the conclusion of the spring semester. Her fall course analysis included a "Rationale." In subsequent pages where she reflected on her spring course, she changed the title to, "Adjusted Rationale." Under her spring "Innovative Methods for Teaching & Learning," she explained what she termed as "adjustments," as well as the "major change" in the syllabus to include "discussion days."

> Although I still believe that the rationale stated above applies, in my second semester teaching this course I adjusted my methods of teaching so that the "broad overview" was less broad. To keep topics interesting and relatable to students as well as facilitate active student participation, I found that it was necessary to add a discussion component to the course. Therefore, in my second semester, I adjusted some of my course content, focusing on fewer large topics in psychology

> and incorporating a "discussion day" for each topic. This ensured that students had the chance to speak out more in class, thus emphasizing collaborative learning that is a goal for my teaching philosophy "reciprocal learning."

Because she noted that not all of her fall students had seemed as engaged as she would have liked, Julia redesigned or introduced two course components, "Thought Questions/Mini Assignments" and "Discussion Day Participation." For every unit of study in the spring course, students were to respond to the "thought questions" by writing short papers and using them in class as discussion prompts. Sometimes she would construct the questions; other times, students would. As well, she devoted one discussion day for every unit of study. Her goal was to have students "actively learn by further analyzing a particular topic as a class." Although she realized that not all students would feel comfortable speaking aloud, "I tell students that I expect that they will have something to say at one time or another." She "adjusted" the writing assignments to include choices among the "discussion day" topics, giving students "the opportunity to further demonstrate that they completed and understood the reading for that day. More importantly, these papers require students to integrate the additional reading with course content and personal reflection."

Based upon her fall experience, she intended to make better use of Power Point slides to mitigate students' over reliance upon them. While there was always this danger, she noted, more visual learners might find "consistent use" of slides beneficial. As well, "based upon feedback" from her fall class, Julia intended to institute regular review sessions.

Although the "discussion days" component was designed to involve every student, Julia was happy to discover that her new class seemed quite willing to speak up, even in the first days of class. She was "pleased," she said in seminar, that students asked questions. Marcus said he had experienced something similar. Dr. Marcello advised that student participation can "wax and wane. You might get a very lively group, and then you'll reach a spell when nobody talks." When this occurred, he said, he always wondered what part he had played in his students' behavior. "Is it something I've done? Is it the material?"

Two weeks into the new semester, Julia's students began filtering into the dark classroom on a Friday morning 15 minutes before class began, backpacks and jackets dripping from the rain. Some looked at course materials. Others talked quietly with one another.

Julia had arrived five minutes before the start of class, dressed in a blouse and black pants. She returned papers from the previous class by calling students' names—most of whom she knew—and walking around the classroom. One student said, "Thanks," when she gave him his paper; another looked at her and smiled. When one student saw his paper grade, he whispered, "Oh, sweet!"

Julia smiled and looked at the class. "Good morning!" she began. The class, an exam review session, was designed as a Jeopardy game. Students readily formed groups, and a woman volunteered to keep score. As the class had not used the game technique previously, Julia explained how it worked. Using a Jeopardy template projected on the front screen, she conducted the session by soliciting appropriate "questions" for each item. When one student gave an

incorrect answer, Julia said, "Sorry, Kelly." When another answered correctly, she said, "That's right." Often, she gave brief explanations of correct answers. Throughout the game, she addressed students by name. One team chose "Neurons" for $500. Julia said of the student who was ready to answer, "He's going for the big points." When the student hesitated in his answer, she said to his group, "You can help him out, team." When they answered, she said, "They're going with cells. They're right." A student responded to a question about the location of the emotional center of the brain. Julia said, "You're going with the medulla? Does anyone in the team support her?" The team changed their answer to a correct response. The class completed the game close to the end of class time. As students began gathering their belongings, Julia reminded them to email her with questions about the upcoming test. "Enjoy the Super Bowl. Good luck studying."

In the next seminar, the group spent some time listening to and commenting upon a "borderline problem child" Marcus described. They discussed how or whether he should address the issue with the student. Dr. Marcello advised that Marcus sandwich any remarks that might be construed as criticism with praise. Julia suggested that Marcus might describe to the student what respectful behavior looked like, and then dramatized what he might say to the student. "In addition to the praise, kind of walk him through it." It was possible, she said, that the student might have "attention or behavioral" issues that contributed to his mannerisms in class. Dr. Marcello agreed.

Later in the session, Christian described how "disinterested" his students seemed when he presented examples to explain concepts. They did not take notes when he did that, he said, and "would quite regularly *ignore* the things that weren't definitions." Julia said that she had done a "little meta-teaching" in the beginning of the semester. "I specifically stopped and said, 'It seems like I'm not referring to what you may think is important right now, but, really, when I speak about things in length, and go on in example, *that's* where the learning is probably going to take place.'" This, she said, worked very well in the fall semester. Dr. Marcello said that "meta-teaching is *always* a great idea," and encouraged Christian to use it in his case.

A few days later, Julia began her class with a slide that read, "Nature Genetics Research." "We're a little sleepy this morning," she said to the class. She reminded students that, in the previous class, she had introduced the "nature/nurture debate." She articulated her words, spoke in a voice that could be heard throughout the room, and maintained eye contact with the students as she walked slowly from one part of the room to another.

"Does anyone have an idea of a population we should look at if we're interested in studying genetic traits?" she asked. When no one responded, she rephrased the question and a student answered by explaining a population he had studied in high school. "You're right on the ball," Julia said, smiling. "As Tom brought up," she began, and explained that they were attempting to identify a "population with similar genes," like twins. She said that she was a twin, named her brother, and explained the difference between fraternal and identical twins,

the relevant population. Throughout the session, all students were attending to her. They laughed when she inserted humor. Many students responded when she asked questions, which, quite often, related to their own experiences.

How about the question of "nurture?" Julia asked. Who had the most influence on their development? Two students spoke out. "You would say parents," Julia repeated, projecting a slide titled, "Cultural Influences." She paused while students copied the contents. When a student sneezed, she said, "Bless you." For the remainder of the lecture, Julia regularly reminded students of previous material, asked conceptual and personal questions, and received ready response from several students. Whenever a new slide appeared, she allowed time for students to take notes, and indicated material they did not need to record. After about 30 minutes, Julia asked students to take out a "mini-assignment" she assigned the previous class, and, if they felt "comfortable," to share their responses with others. Most of the class did so.

"Anything happen in class this week worth discussing?" asked Dr. Marcello in the next seminar. Julia listened, but did not participate as the group discussed of a number of issues. When the group discussed the advantages and disadvantages of small classes, Julia said that smaller classes might necessitate a different "interpersonal level" from the teacher.

> Understanding that you're probably going to know those 15 or 20 students on a very personal level, and to kind of be a manager of that relationship. For the first time, you may know a student more than just their name. You may know, like, their beliefs about sensitive topics and things like that. So, I think that you need to set boundaries and understand what type of interpersonal relationship you are going to have.

In a casual conversation before the next seminar session began, Julia, who worked in the psychology laboratory, said her students often came to complete their experiment participation requirement. "It's nice because I actually speak with them as human beings instead of students in my class. And they're always, like, 'Oh. I find the class interesting.' You don't ever know. I feel like I'm really boring. Sometimes we flounder more than we like just because we're getting used to this stuff."

In the seminar, Dr. Marcello advised Christian to use the Socratic method to guide students to understanding. Julia noted what this might look like from the "student perspective," saying that the teacher might regard it as too prescriptive, while the student's learning might significantly benefit. He agreed that the construction of questions might be a challenge, said Dr. Marcello. However, as Julia said, questions could lead to insights that students would not come to in other ways. "It's more active and interactive. You're not just telling them."

A week before mid-semester, ten minutes before Julia's class began, two students discussed the day's writing assignment. One student had not yet completed it, and he asked the other how she had. As he did so, he wrote. Two other students talked about the reading assignment. "After all of that, there's no correlation!" one said.

Julia began by summarizing content from the previous class and outlining the class agenda for the topic of sleep. Throughout the class, she reminded students of previous material by saying, "Remember when we . . . ?" To introduce the concept that sleep affected attention, she asked whether anyone

had ever "pulled an all-nighter." The class laughed, and a woman in the front row answered immediately, followed by several others. Everyone participated in a poll of average number of hours of sleep, and they all watched Julia and took notes as she briefly explained related terminology. Julia consistently moved beyond textbook definitions to explain concepts using examples related to students and young people. As well, she frequently invited students to guess at upcoming points ("Anyone want to take a guess as to which group did the best?").

As a change from discussion groups, Julia said, students could select partners with whom to share their responses to "thought questions." Everyone quickly moved chairs and began talking: "I was just surprised that . . .," "They didn't really say . . . ," "*I* never did, but my freshman year . . .," "That's what *I* wrote!" Julia walked around the room, joining groups for a few minutes. Students indicated they wanted more time to discuss, when she asked them. A student quickly volunteered to summarize the article when Julia asked.

In the subsequent lecture/question-and-answer session, Julia indicated a student was not correct when she answered a question originating from text material. After about five seconds, a student responded correctly. "Right," said Julia. "Can you tell me just a little bit more about that?" For the next several minutes, Julia solicited responses, which students gave with little hesitation. She often asked students to elaborate on their answers, or did so herself. She addressed respondents by name.

"Does anyone have anything they'd like to talk about?" asked Dr. Marcello in the next seminar. Marcus and Dr. Marcello talked for a few minutes about a problem that he brought to the group. Despite explicit instructions, many of his students submitted papers with no reference citations. In a quiet voice, Julia said, "It's just speculation, but *maybe* they haven't seen a paper with citations recently," and while she knew Marcus had given them a handout, perhaps his students needed to be shown how to cite, rather than just be told how. Dr. Marcello agreed with Julia, and Marcus said he would try their suggestions.

In Julia's class the week after mid-semester break, she opened by projecting a slide titled, "Chapter 7: Learning." Moving about the classroom, she quickly returned exams, recognizing every student. One woman clapped quietly and smiled when another shared her grade. Julia looked at the students and said:

> At this point in the semester, a lot of us begin to have insecurities, and begin to worry about our other classes. It's important for all of us to be on the same page in terms of reminding one another what exactly our final grade is going to be comprised of. Participation is based on submission of thought questions and mini-assignments, as well as how well you're doing on those assignments. It's also based on whether or not you say something *some* of the time in class.

She explained that students had two ways of participating. They could answer or ask questions, or, "if you don't feel comfortable speaking in class," they should make sure they keep up with writing assignments and laboratory experiment participation.

Beginning with examples related to students, Julia structured the class on learning by alternating brief explanations with questions to students. As she

talked, she related the content to student life, and recounted some of her own relevant life experiences. She spoke at a steady pace, but always paused to allow time for students to take notes or ask questions.

To begin a demonstration on learning, she distributed candy powder-filled Pixie Stix, saying that students were under no obligation to join in the demonstration. Before commencing, she summarized the text reading about Pavlov's conditioning experiment. When she simultaneously slapped the table and said, "Pavlov," students were to eat some of the powder. When she said the name but did not slap the table, they were simply to "think about" eating the powder. All students participated in the demonstration. At its conclusion, Julia asked, "Can anyone tell me what happened when I didn't slap the table and you anticipated eating the powder?" Several students reported that they salivated. Julia paralleled their experience with the events that occurred in Pavlov's experiments.

To elaborate upon the topic of classical conditioning, she showed a short video on Pavlov's experiment, referred to their recent Pixie Stix experience, and explained concepts in terms of students' lives. "Let's try a real world application." "Can anyone make that generalization for me?"

When, a week later, the weather suddenly turned warm, students arrived to her Friday morning class in sandals and shorts. "Good morning," she said. "It's one of the hardest days, I think so far, to be in class." She complemented the class on their "performance" in the previous class, explaining that her "teaching

mentor" had observed. "He really thought you all were a great group. Sometimes I forget to tell you that I think you're doing a good job. So, it was a nice class and I appreciate that."

Before she introduced a new chapter, she asked whether anyone had questions about previous material. No one did. Explaining that the day's topic was in her specialty area, memory, Julia said that, sometimes, "when you know something really well, it can almost be more difficult to teach than something you know less about." What she wanted them to do that day, she said, was to think about how memory was important to them.

She asked a series of rhetorical questions which focused on ways that memory affected daily living activities. Then she asked students to share with a partner what they were "most forgetful about." Students immediately engaged and began talking and laughing. When the time was up, Julia began to explain, using Power Point slides, how psychologists define memory. She paused for students to take notes, and, rather than assert definitions, presented examples and analogies related to student life.

When she wanted students to focus on a point she was presenting, she turned off the Power Point. She asked students to recall the concept of attention processes that they had covered weeks before and used concrete examples to explain their function in memory. Her explanations were interrupted by short response exercises ("Which letter of the alphabet doesn't appear on a telephone dial?" "What is the color on the top stripe of the American flag?"). Every student looked at her and several answered consistently.

No one responded at first when she asked a question from the text reading, "What pneumonics can you think of?" Without giving the answer, she indicated they probably knew one related to "math operations," after which a student immediately responded. She continued by giving the class two exercises on memory chunking. At the end of class, Julia forecasted the next class's topic.

In a subsequent personal interview, Julia said that, after more than a semester in the classroom, she believed a collaborative classroom could break the distinctions between teacher and student. Nevertheless, this did not demand that students speak up as much as the teacher:

> It's not always active. I think sometimes it's less deliberate. It's more passive. The exchange can change based on the teacher and the students. Sometimes there is an artificial wall that gets put up. That's more of what I'm thinking of. Having an open exchange. You start from what goals you have in terms of their learning. You want them to respond to you, not just to get it. There are certain ways that you get at the process of them achieving learning.

Student behaviors—writing, attention to questions, level of confusion—were all ways she could use to assess whether and how students were learning. That was not to say that such assessment was not "muddy," as learning was exhibited differently by everyone.

The major revision she had made to the course, the reading/writing/discussion component, seemed to be realizing several of her goals. "Participation" was one goal; another was a "technical" goal of exposing students to a variety of written sources. To her delight, students were integrating readings and discussions and writing, relating course concepts to their experiences, and she had been sensitive to all of their behaviors. "I can't tell you

how many times that I have done things differently because of what they've been telling me." "There have been several light bulbs that have gone off."

> The challenge has been, and thank goodness I met with [Dr. Marcello] at the beginning of the semester. I had all my topics lined up, and I said, "These are the top picks that I'll be choosing readings on." He made it clear that, "[Julia], you need to hit them over the head with something they're going to be really interested in. Otherwise, the discussion will not be a discussion. It may not take off the way you want it. So, I've been, probably, *too* critical of the pieces that I chose. I'm like, "Okay. What are they going to think about this? How are they going to react? Is it relevant to them? Am I too far removed?"

She had been continually impressed, she said, by the thinking students exhibited on their papers. "In the beginning, I tried to tailor, shape them, say, 'Okay. Don't write too much. Don't write too much.' Now, I just let it go. Why not? If they are learning from the experience, then I'm learning from *their* learning."

Dr. Marcello and Julia met in his office to review his reactions to one of her classes that had been videotaped in the fall semester. On the tape, Julia was explaining to the class the results of an exam she had just graded. Dr. Marcello stopped the tape and remarked how confident she looked. "That's a surprise," laughed Julia. "No, I'm not confident, but, I'm so analytic, thoughtful. You know, you're constantly worried. Confidence isn't the problem. It's just over thinking things." Dr. Marcello paused the video tape often to remark on Julia's teaching style or give her some advice. He said that, as Julia gained more experience, she would be better able to move among lecture, questioning and other activities.

> You're learning to drive a car. This was your first semester. "Am I talking loud enough? Am I making eye contact? Am I following my notes? I have all these things to remember." You are virtually blind to the subtle cues that your audience is giving you. And so, it doesn't come naturally. Once you master driving this car, you are going to look out and see things you never saw before. It's not a conscious

> thing. You'll say, "So let me make sure that you understand this. Can anyone here provide an explanation?" You'll just *do* that. You won't even know why you did it, because it'll happen because you're so sensitive to their cues all of a sudden in a way that you weren't sensitive before.

Julia gave examples when this unconscious response had already occurred.

As the semester drew to a close, Julia, Marcus, Christian and Stacey shared their teaching experiences with the next year's cohort of doctoral students at a session called the "Fish Bowl." When the group was asked to describe their most rewarding or "punishing" learning experience, Dr. Marcello invited Julia to talk about the changes she made in her course from the fall to the spring semesters. When she first began teaching in the fall, she said, she had not realized how difficult it would be to achieve her course goal of creating a collaborative learning environment by "getting students involved in talking." This realization precipitated two major changes to her course for the spring, "to be a better facilitator" and to redesign the course to include regular discussion activities. She reported that the experiment had been a success, although making the change had not been easy. "For me, especially because I like to organize," revising carefully designed module materials and saying, "'Okay, let's do something new,'" was painful. What made it possible, she said, was that she understood the need for change. Always be "purposeful," determine the reasons behind what and how you teach. Teaching is a series of choices based upon the objectives you have for your course, she said. She had a new understanding about change: "I'm still working on it, and I will always be working on it, because your students change. You change, but so does your classroom. You might have

five people who talk all the time, but it's really neat when you have 15 people or 20 people who always speak out. A new class presents difficulties in terms of getting you feedback." Dr. Marcello told the group how impressed he had been when he observed Julia's class. She had managed to create a classroom where every student was "engaged," "even the ones who weren't speaking out."

At the end of the semester, Julia submitted the teaching portfolio required as a final assignment for the practicum/seminar. In the "teaching philosophy" portion she explained her belief in "reciprocal learning":

> As a teacher, I hope to convey to my students the importance of learning through *shared meaning*. As we explore a topic together I will always attempt to persuade them that learning is dynamic and reflective, in other words *we* can learn a lot from one another. Such learning I identify as "reciprocal learning." . . . I certainly wish that my students will learn something about psychology from me. Additionally, I hope that my overall enthusiasm to pursue the topic of psychology will model to my students that one can never stop learning. Moreover, I will learn from my students how to better improve my teaching.

She wrote that she had three teaching goals. First, she intended to create a collaborative environment in her classroom, a reaction, in part, to barriers between students and teachers created by standard lecture methods "where absolute truths are transcended from a teacher to her students." In her classroom, she would encourage students to critically analyze information, rather than to accept what they read or were told by the teacher. Sharing her own life experiences, where appropriate, contributed to a collaborative environment. Her choices about teaching were intentional and decided upon only after she reflected upon them from the perspective of the learner.

Julia's second goal was to "engage students in the process of learning." She believed that there was no single best approach to learning or teaching. For as long as she taught, she would be challenging herself "to understand the methods that help my students learn best." Consistent with the "learning paradigm" described by Barr & Tagg (1995), she would always seek to excite learners, guide their discovery, and "promote success." Relating course material to students' lives, she said, was an important way of accomplishing this goal.

"My students will be teachers" was listed as her third teaching goal. She intended to create a learning environment where "students should be able to identify moments in class where they are able to take on the role of teacher." At the same time, "I will be just as much a learner as I am the teacher."

Included in the teaching portfolio was an analysis of the student evaluations she had received in the fall and spring semesters. Her highest scores corresponded with items connected with "relationships with students" and class preparation. She believed this was a "direct reflection of my personality." "Students in my classroom understand that I am not only trying to build rapport with them as a teacher but that I am generally concerned for and tuned in to their needs as students." Some students in the fall semester complemented her on her ability to answer questions effectively. As well, she believed that organization was one of her strengths. She explained that scoring high in these areas was important to her, as it reflected her belief that reciprocal learning may take place only in a supportive and structured environment. Student evaluations, she

explained, were both a valuable way for her to assess her behavior and to understand the components students regard as important to their learning.

> Students in my mid-semester evaluations from this spring commented that at times my presentation of material is organized to the point where it is scripted; some students find this type of structure uninteresting. Thus, it is important to think about how the dynamics of the classroom can and should change how I teach from one semester to the next. . . . I hope to continue to improve my teaching by learning from my students.

Julia believed that, overall, her teaching was a success because she had provided a broad overview of psychology, had "encouraged students to learn to be informed consumers of psychological information," and helped students learn through reading and discussion. "In addition to these explicit goals, I feel like on a more personal level that I was able to connect with my students by sharing my enthusiasm and genuine love for the topic."

Her first teaching year, however, was "just the start" of her career. After years of understanding learning as a student, she recognized the "courage" it took to "see oneself and be seen as a teacher. This part of teaching as been profound."

> I can sum up my reflections of this course by expanding on three words: Dissect, Adjust, and Adapt. When I first started teaching it was easy to worry about and criticize everything and anything I did in the classroom. After this initial anxiety settled I was able to focus on things that were really necessary to learn about my students and my teaching. Finally, I found that I could not only adapt to but enjoy teaching and took comfort in knowing that there will and should always be "lessons learned."

After the semester, closed, Julia spoke in an interview about the reaffirmations and realizations she made in her year of teaching. She was able to articulate with more confidence what she knew and what she did not. One discovery she had made was that organization was always of relative merit,

something that she had not realized when she began teaching. She had always thrived on being organized, she said, but teaching had revealed that there were good reasons for rethinking the organization of her fall course. Dismantling and reorganizing were painful but necessary if she was to advance her goal of student engagement. She considered that, outside of a context, organization was not necessarily a value. Indeed, she had come to realize that, from some learners' perspectives, her manner of organization was detrimental to their learning. "They have less structure, and they don't like it when something's presented to them in what may be perceived as a cookie cutter way. It might frighten them. I never realized that before." Though this idea would not make her abandon her inclinations to organize, she said, it would be something she considered when she reflected about teaching and learning.

Another quality she was confident about coming into teaching was her ability to assess situations, but she had learned that it was not so simple to know when students were engaged. Two students she worried had been "totally disengaged" were able to explain in detail what they had gained in her class in semester evaluations. "Your radar can be totally off." Her commitment to "total engagement" that she had fretted about in the fall had been replaced by a realization that, just as students learn in individual ways, so, too, do they engage differently. Sometimes, engagement looks like

> passive listening. Getting them in groups and forcing them to do discussions about topics was really informative. Sometimes, it was a bit off-topic, and maybe the filler wasn't all the hardened facts. But seeing them be confident enough to take a definition and then explain how it related to them [was informative]. If you're looking at a hierarchy of learning, we're still at a low level, but *that's* how they're transferring knowledge.

This, she said, had surprised her. Not only were students interacting with one another in discussion, they began integrating their personal experiences, including those gained from her classroom, in their work. She heard, "This is what I saw in my sister," and, "This is what I learned by watching this television commercial." She saw her students "giving knowledge to other people." Because they were able to express ideas in their own words, she knew that they had made them meaningful. She had learned an important lesson about creating engagement. Sometimes, letting students deviate a little from what she had planned resulted in a kind of engagement she had only hoped for.

The lesson she would carry away? The need for "flexibility." She had begun to learn that flexibility and organization were not antithetical. "Maybe internally, you have everything mapped out, but, externally, you can avoid being so bound by rules, or bound to a plan, by being flexible, letting people know that, if something doesn't go a certain way, you don't get fazed. You've got some organization, but you're just willing to adapt, to go with it." The spring semester, she said, had been an easy class, but she anticipated that she would be faced with a class sometime in the future that would challenge her sense of control. She had learned the danger of being too "rule-bound."

The year had been a process of taking teaching "and making it my own."

> It's such a transition stage now. Transitions are hard for me. Like, what the heck is going on now? I guess it's feeling like graduating into a teacher role from a student role, . . . the physicality of being a teacher. I think I'm feeling older, feeling like I'm more of a "go-to" person now rather than just a bystander. I think it's still really artificial at this point how I'm feeling, how I'm thinking. Relieved to have had such a positive experience and to have done well and to feel good about it. I feel it's been an

> accomplishment, but I also feel like it's still artificial. I'm on the path of thinking, seeing myself in a different way. It's really a profound thing to think about.

Analysis

Ultimately, the purpose of reflection is learning--self-actualization, the development of new knowledge, the promotion of higher order thinking skills, a dialogue with self, the building of new schema (Baker, 1996; Burton, 2000; Callister, 1993; Richardson & Maltby, 1995; Scanlan and Chernomas, 1997; Valli, 1993). The dynamic interaction between practicing and reflecting on practice can change the way teachers look at themselves and their situations. This dynamic process

> emancipates us from merely impulsive and routine activity . . . enables us to direct our activities with foresight and to plan according to ends-in-view, or purposes of which we are aware . . . to act in deliberate and intentional fashion . . . to know *what we are about* when we act. *It converts action that is merely appetitive, blind, and impulsive into intelligent action.* (Dewey 1933, p. 17)

Given Julia's "natural" tendency to analyze her teaching situation in terms of her teaching/learning goals, the words "appetitive, blind, and impulsive" seem inappropriate descriptors of her thinking behavior before she stepped into the classroom. On the other hand, even Julia admitted that the nature of her thinking changed once it engaged with the context of her new college class. Evidence from her teaching portfolio, course documents, student evaluations, seminar and class observations, and personal interviews suggests that her experiences in the spring influenced how she reflected upon her classroom experiences and how those reflections encouraged her to articulate new understandings about herself as a teacher.

Classroom Experiences

When she began teaching in the fall, Julia had carefully designed course materials by considering their value in terms of her teaching and learning goals. She had conferred with Dr. Simpson, and, though willing to revise, believed that she had chosen elements that would result in the collaborative learning environment she desired.

Once her construct was placed within the context of her fall class, however, it did not exactly trace the makeup and dynamics of the students, an issue that dominated her reflection and encouraged her subsequent revisions for the spring. By the end of the fall course, Julia held competing views about how student engagement should be defined. While she frequently implied that it necessitated a classroom of actively participating students, she regularly questioned that assumption by noting the engagement of students who said little.

From the beginning of the spring semester, Julia remarked that a much larger portion of the class seemed willing to participate orally than the semester before. As the semester went on, this group of 50 students seemed to present themselves very differently from her fall class; they were an "easy" class to teach. Perhaps this perception was a contributing factor in Julia's reconsideration of her standards for engagement.

Observation of the class reveals a responsive and willing group of students. Julia never asked for a student volunteer without at least one agreeing immediately. Throughout her class protocol of explaining and questioning, every student seemed either to look at her or be taking notes. When prompted, they

formed discussion groups and, for the most part, stayed on topic. Only on rare occasions were Julia's questions left unanswered, and, more often than not, several students replied after she waited or rephrased the question. This was not a class where "only a select few" (the case in the fall) were active participants. On the other hand, as in the fall, not every student vocalized.

On the occasions when she did ask questions that required some relevant experience in the students' lives, students sometimes did not answer immediately. This occurred when she asked whether students knew of a target population for the study of genetic traits, or whether they could name some pneumonic devices. She did not react as though she was concerned at the lack of response, or begin talking instantly (as she said she did in the fall). Instead, she continued to look at the students, waited until they could formulate their answers, or prompted them with another thought or rephrase of the question.

It is not possible to measure the effect the new situation had on Julia's beliefs. However, there is evidence that those beliefs were changing. For example, at mid-semester, she told students that they need not feel insecure about their ability to meet her participation expectations. While that part of their grade would be based, in part, on whether they spoke up in class, it was also defined by the submission and quality of assignments. During that same time period, she said in an interview that a collaborative classroom was not, necessarily, one in which students spoke up as much as the teacher. It seems that she had begun to realize that her previous assumptions about engagement warranted reconsideration. She said that participation was not always active and

deliberate; in fact, she considered the possibility of "passive" engagement. This was something she had noticed in her fall students. In the spring, however, she folded this consideration into her definition of engagement.

The simple participation of her spring students, however, may not have, on its own, influenced Julia's reconsideration. Rather, she seemed to be newly aware of the *way* they participated. Suddenly, she said, students were integrating material, seeing the relevance of the course to their lives. Admitting that she had tried to organize discussions very carefully around "interesting" readings and "tailored" writing assignments" ("Don't write too much"), something had changed. "Light bulbs" had turned on, in her students and in her, and Julia had gained a new confidence to let students learn from the classroom experience.

Julia's experiences in the fall semester seemed to have made her review the assumptions she held about engagement. This sensitivity, operating in the new experience of the fall class, resulted in a new understanding about the importance of change. Admitting that she "over thought" things, that she was typically uncomfortable with change, and that it took "courage" to think differently, Julia seems to have begun to embrace change as a necessary condition of growing as a teacher. The way she described her portfolio analysis process is telling. As she was comfortable doing, she "dissected" course materials and goals. Based upon her fall and spring experiences, she "adjusted" her ways of thinking. As though she had new understandings about the role context played in her reflective process, Julia seemed to realize that she would always need to "adapt" her beliefs to the conditions within which she practiced.

Making the Tacit Explicit

While her classroom experiences played a major role in the way Julia reflected upon her teaching, certain elements of the teaching course demanded that she articulate her understandings in particular ways. Julia did not use the seminar to discuss her changing conceptions, nor did Dr. Marcello elicit a complex means/end analysis about engagement. He did indicate, however, that contexts change.

The reflection required to complete the teaching portfolio in the comprehensive way that Julia did may have played a bigger role in the way she articulated her learning. *A Guide to the Teaching Portfolio* (UNH, 2003) included a suggested table of contents which included, "Examples of innovative teaching methods used," "Connection between course design and your philosophy of teaching," "Your evaluation of student evaluation," and, "Your evaluation of the course." Under the description for "Statement of teaching competency," the guide quite clearly places value on particular ways of assessing practice:

> One of the hallmarks of an effective teacher is the ability to reflect upon his/her classroom experiences—both positive and negative—and to grow from those experiences. This section shows that you have done so. In essence it's a "lessons learned" statement with an eye to using those lessons as a means of self- improvement. In this section you can be open about approaches you have tried without complete success; you can admit that you—like all teachers—have run up against problems you couldn't solve the first time around. Indicating ways in which you have *responded* to challenging situations shows you to be a responsible teacher, one who has learned from mistakes to be a better teacher. (UNH, 2003, p.15)

More directly, the guide indicated that "your portfolio *must* provide evidence that in your teaching you can effectively accomplish each of the following," and then listed articulating appropriate course goals, designing the

course with goals in mind, presenting and communicating effectively with students, providing appropriate feedback, employing a variety of teaching methods, applying knowledge of undergraduate student culture, and incorporating current pedagogical scholarship in psychology (UNH, 2003, pp. 5-12).

In essence, the portfolio guided Julia's thinking about teaching, and it did so by demanding an analysis that assessed her beliefs and assumptions in the light of her classroom experience. The assumptions Julia had about the nature of engagement were never, even at the beginning of her teaching, rigid. By requiring that she analyze them as they applied to her situations, the portfolio assignment may have contributed to her ability to, as Shon (1983) contended, develop a new theory about professional knowledge.

CHAPTER VIII

STACEY

Coming to the Third Year

Stacey was the latest in a long line of teachers. Her grandmother taught third grade; her mother was a special education teacher; her cousin taught in elementary school. Teaching had always been "in the back of [her] mind."

Although she had an interest in social work, she was unsure whether she had the emotional stamina to handle people's problems. Instead, as an undergraduate, she focused on social psychology. She tutored students in psychology, "designed and instructed a series of hands-on activities to support class work" in an introductory course, assisted in a student retention study, and coordinated the service-learning component of a course. She also volunteered for Habitat for Humanity.

The University of New Hampshire was recommended to Stacey as a potential site for doctoral study in social psychology by her undergraduate advisor at the New Hampshire college from which she graduated in 2003. Because she was not attracted to "hard core research" and preferred to interact with students, she saw the doctoral program at UNH as an opportunity to gain the teaching knowledge necessary for a future career as a faculty member.

Stacey's research and conference presentations included investigations into dating violence, and attitudes about war and mental depression. During her

first two years at UNH, she served as a research assistant, coordinated undergraduate honors students in research, and interned at a neuropsychology department in a New Hampshire hospital. As a teaching assistant, Stacey "produce[d] and deliver[ed] guest lectures, graded tests and papers, and conferenced with students." She was a student affiliate of the American Psychological Association, served on several university committees, and secured a number of awards related to her academic achievement and scholarship. Concomitant with her doctoral degree, Stacey intended to complete a master's degree in college teaching from UNH.

At the beginning of her teaching year, Stacey thought that "teaching, to some extent, is something you can either do or you can't do." Large amounts of information about how to teach was not enough, she believed, to make a good teacher. As an undergraduate, she had a professor who "would just stand up in front of the class and lecture for an hour and twenty minutes, in a monotone voice. We never did any group work or activities. I fell asleep every class." While she felt that she had some qualities that contributed to good teaching, the information and feedback provided by the seminar would provide ways to reflect upon what she did in the classroom. "Without the resources here, and without learning about teaching, I don't know that I would have known [not to] just stand up there and lecture the whole time, or to do interactive learning."

Although her goal was to engage all students, she understood the challenge in doing that:

> I recognize there are different learning styles. Some people are going to learn fine just [by] listening to me, whereas some people are going to learn better with a Power Point—so they can *see* what I'm saying. Some people are going to learn better by experience. My job [isn't] just to teach and not care if they learn.

The Fall Semester

Narrative

"Welcome to Introductory Psychology!" read Stacey's fall syllabus. She described that the class would discuss topics like "emotion, personality, prejudice, and learning." Through "discussions, lectures, demonstrations, and activities," students would gain understandings about the field of psychology, apply those understandings to their lives, and "learn how to evaluate research." Three course objectives were described. Besides terms and concepts, students would become familiar with different psychological theories. A second objective was that students would develop critical thinking skill by asking questions, assessing evidence, and making "judgments based upon available evidence." Finally, students would "discover the personal relevance of psychology."

Course grade was divided among six tests (50%), in-class assignments (10%), two papers (30%), and lab experience (10%) (the last, a requirement of the psychology department). The papers would give students experience in relating psychology to their lives. The "Application Paper" required students to write about a course topic that applied to their lives, and the "Movie Paper" asked them to relate social or abnormal psychology concepts to an assessment of a feature-length film.

Of Stacey's 30 students, 13 were first-year students; the rest were distributed among the remaining three levels. One senior student was a biology major, and another a physics major.

Stacey kept a brief teaching journal, and often classified the 12 weekly entries according to the teaching module covered that week: "Learning," "Social," "Memory." In most cases, entries described her activities for the week; occasionally, she assessed class activities.

"Teaching went okay," Stacey wrote in her first journal entry. Though her class was "very quiet," students seemed to enjoy group work. In the spring semester, she wrote, she would create a scavenger hunt for the first day, because class introductions were "a little boring." When she became aware that everyone was staring at her she had some "first week jitters," and this made her speak too fast. "For the most part, they tend to focus attention on me. When I have my Power Points and my definitions up there, they're writing down notes, but I give them time. I wait until probably three-quarters of the class is done writing." Though she had "no problem" with letting students out early, she realized she had covered an entire lecture in 30 minutes, which meant that she was probably talking too fast.

Stacey described as a central concern how to "get through" all of the course material. "That's the most important part, but it's not the most important part sometimes." She wanted students to learn, not "just rote memorization. That's what success is for me. If they get to the end of the semester, and they

feel like, 'Well. I actually know something about psychology now,' then that will be success for me."

The required readings for the second week of seminar focused on the use of discussion groups. One reading, from McKeachie's (1999) *Teaching Tips*, began the chapter on facilitating discussions by equating them with "active learning." "Discussion methods are among the most valuable tools in the teacher's repertoire" (p. 44). Dr. Simpson reminded the group that they should not adopt the teaching methods they read about without carefully thinking about their appropriateness to course goals. "Why would you want to use discussion in your class?" Dr. Simpson asked. Julia said that it was "more engaging than just lecturing." Stacey said, "It takes the focus off of you, if it's done correctly, and it helps it become a student-to-student dialogue." Dr. Simpson asked why that might be a good thing, and Julia said that the new focus might help students learn. Dr. Simpson nodded:

> The idea that discussions are linked to some of the things that we hope are going on in our classes. Learning useful skills and the ability to convey thoughts in speech. A number of articles talk about what is really happening in the learning-centered classroom. Can't just [be] making deposits in the bank passive model. Actively working with material, each other. Deep processing.

Dr. Simpson directed the group's attention to some of the challenges of using discussion. Christian immediately said "time," and Stacey recounted how the readings helped her see the need for teachers to reflect upon the use of discussion, rather than using it without thinking. Marcus indicated that structuring discussions was more work for the teacher than it might seem, and Dr. Simpson agreed. She explained that the teacher's decision to use discussion indicated

how s/he viewed the situation. If "teaching" was the focus, a polished lecture might seem more efficient and appropriate than the sometimes uncontrollable situation of discussion. However, even in discussion, she said, the teacher must still control the situation: "Once you get students talking to each other, there's all kinds of stuff that can happen that's not tightly planned. No discussion is ever going to be the same."

She then guided the group's conversation about the advantages and disadvantages of using discussion. The group talked about the advisability of providing discussion questions to students beforehand, and whether discussion was an appropriate method for all kinds of psychological topics.

When the group turned to ways to design questions that prompted and maintained discussion, Stacey said the assigned reading had been enlightening because she had learned about the correlation between the questions a teacher asked and the kinds of responses students gave. McKeachie (1999), for example, outlined several different types of questions teachers could devise and suggested that they strategize when to use them. Designing discussion questions was not as easy as Stacey had thought:

> Not only do you have to have this prepared, previous to asking the questions, but then you have to remember to ask for the what, or the how, while you're doing it. I think that I've taken it for granted. We're in these seminars, and, a lot of times, discussion just comes because we're used to contributing our piece at some point. But here we are in a different context, and I'm just plopping my students down in the middle of an analytical [conversation] when they're back at factual.

That was exactly the challenge, said Dr. Simpson. Designing class discussions for upper class students differed from strategies used for the less experienced.

What they all needed to remember was that there were many kinds of effective teaching, and that they should use a "blend" of techniques to realize their course goals. Remember, she said, "we should not throw lecture out the window. We need to improve upon it, but lecture is *very* useful for some very specific learning goals that we have for our students." Rather than decide upon one teaching method, they should "pick and choose" among the many ideas they were exposed to in class readings.

Later in the discussion, Stacey wondered how control could be maintained when some students dominated discussions. Dr. Simpson asked how they could assure that all students, not just a few, were involved in discussion. Marcus suggested that dividing the class into small groups would maximize the chance that every student could participate, but this was dependent on their ability to engage in this kind of dialogue. Stacey agreed with this idea, and explained how she had formed groups of "two or three" already, which worked well. Then Dr. Simpson explained how they might mentor less-talkative students, or have students write responses before speaking.

The issue of asking students questions arose in a subsequent seminar discussion. Stacey told the group that she was developing a heightened sensitivity to students' body language: "When I was asking them questions, [I could] tell that some students don't want to be the ones to raise their hands." This made her think about the challenges of using class discussion. Before she did, she said, she would put thought into crafting questions that might appeal to students. Her class participated in group work, she had noticed, but "they don't

like to talk in class." In an email she sent to Dr. Simpson, she said she was worried that requiring students to speak up might create anxiety. "Cold calling can also make other students feel alienated or so anxious that they do not focus on the teacher and only focus on what they will say if they are called on." Silence between teacher asking and student response could be "painful."

Soon after, the issue of student participation arose once more, but this time in Stacey's class. In her journal, Stacey described a "problem student," a senior who consistently noted every error Stacey made, and frequently interrupted her lecture. She emailed Dr. Simpson about this:

> I have a student who likes to be rude while I am teaching. If she doesn't like a particular point or example she very loudly says so. Several people have suggested I call the student out; if she says an example isn't good, then I should ask her for a better one. Is this something that I should try, or will it just make her act out even more? Outside of/after class, she is very friendly, so I get the impression she is being a show off. Will embarrassing her do the trick?

Embarrassing her, she considered, might result in alienation. Not concerned about her personal welfare, Stacey wondered what the situation was doing to the class atmosphere. In seminar, the group talked about the advisability of confronting the student, and, in general, the best ways to ensure that all students felt comfortable about speaking up in class.

Stacey's concern about students speaking out of turn seemed to be mitigated somewhat by the next class experience, when several stayed after class to talk about class content. "It was kind of nice" she told the seminar. Even "the girl who gives me the hard times" stayed after. "The ones who stayed are the ones who are willing to talk and answer questions."

To stimulate class participation, she offered bonus points on the upcoming test, which prompted more students to speak. Nevertheless, one side of the room seemed especially "intimidated," and upper class students seemed to speak up more often than others. "I think it just happens to be the atmosphere in the classroom, that [some students] just don't feel comfortable asking questions, maybe because they know that some of the students are older." She concluded, "There's just nothing you can do about it, really." Although she was loathe of making students uncomfortable, she considered assigning discussion group membership in order to distribute the "talkers" and the "non-talkers." In a subsequent review session designed around a Jeopardy game, she tried this. "They generally didn't get upset about it."

The tendency for her class to rely on a few talkative students, Stacey said, made it difficult for her to know whether the class understood the material. To address that problem, she instituted regular "muddiest points" papers—short, anonymous written responses that detailed what students were confused about. Armed with this information, Stacey opened the subsequent class by "clarifying all the points that they had." Not only were they giving her valuable information, but the assessments gave students the message that she was, ultimately, concerned about their learning. "If it was just my job to teach and not care if they learned it, I wouldn't go back over it. If half the class doesn't understand, then I'm not doing my job very effectively."

A few weeks into the semester, the seminar group was assigned several readings about active learning and the advantages of small group interaction in

the classroom. Davis's (2001) *Tools for Teaching* indicated that "students learn best when they are actively involved in the process" (p. 147). Dr. Simpson began the discussion by asking, "What do you think about the arguments in terms of what some of the limitations or costs may be of using these kinds of active learning strategies, and what do you see as the benefits?" She summarized the opinion of most of the readings that teachers should not just "talk" at students, "but you're breaking it up and doing different things." Stacey and Julia said that they agreed with the advice that one reading gave—the use of active learning should be strategic and purposeful. Dr. Simpson asked Stacey to speak about a concern she had shared with her. It seemed that her students expected "straight lecture," and, when she tried other techniques, they resisted. Stacey believed that her students associated psychology classes with lecture. In light of this, she wondered how she could change her lecture style:

> It seems like a lot of them don't want that. They *want* me to straight lecture, and they do *well* with that. I don't get them falling asleep when I do a lot of lectures, and they're really actively writing. So it's hard for me to break that up and do the demonstrations, where it seems like a lot of them don't like it. They end up enjoying it after I do it, but there's a lot of resistance in my class.

She supposed it had something to do with "the type of learners they are."

This was a good example, said Dr. Simpson, of why teachers needed to continually revisit their learning objectives. "Is our objective really for them to learn this huge body of terms?" She reminded them that, the previous summer, they had indicated course objectives like the "transference of knowledge to their *real* life, applications in their lives, or critical thinking." Perhaps students preferred lecture because they had learned that lecture material was on their tests. "How

much do we push them to say that Intro Psych is more than that?" she asked the seminar group. She had personally been surveying psychology faculty to determine what they expected students to exit their courses with. Rather than expecting that students had memorized a deep and wide pile of information, she said, most faculty wanted students to come away with initial ways of thinking about the material.

Part of the difference between the seminar group's experiences and that of other faculty, she explained, had to do with textbooks. Texts for introductory psychology were characterized by huge amounts of terms, definitions and concepts, and covered hundreds of pages of information. It was easy to see why new teachers using such "vocabulary-driven texts" would believe coverage of all that material was expected. It was difficult for new teachers to know how and whether to cover such a large body of knowledge. "I know that's what all of you have been grappling with in your modules. It's the *thing* that we assume we do. You know, we have the course catalog description: 'Introduce students to psychology as a science and cover something about these seven areas.'" As future faculty, they were living during a time when teachers were revising assumptions about transmission of knowledge to embrace assumptions about their roles in helping students learn. No longer was the central concern "covering material."

When Dr. Simpson said she was considering not using a textbook in an upcoming course, Stacey said the idea was attractive to her. She often felt as though a comprehensive textbook confined her to simply re-covering what

students had read. She preferred that they get course information in class. "If they've already read the textbook," she said, "then [it] has already stolen my thunder." Not only that, said Dr. Simpson, but the textbook automatically made students focus on details that may actually inhibit their "fundamentally grappling with questions." Yes, agreed Stacey. "When they read the textbook, it's, 'I have to know *these* terms.'" Stacey suspected, however, that her students did not read the textbook, as her tests were constructed largely from in-class material.

Before the session ended, Dr. Simpson cautioned that the use of active learning needed to match the goals and context of their classrooms. Every teacher and every class situation were different, and they had to choose the teaching techniques that best suited their reality. While they had read widely about the learner-centered classroom, she said that goal could be achieved in a number of ways. As new teachers, they should experiment with a variety of techniques; however, they should simultaneously be aware of their own comfort level in doing so.

Stacey's students often reacted positively to activities and visuals, she noted in her journal. They were "interested" when she told the story of a brain-injured man, and enjoyed the video clips she showed on experiments. They were especially talkative when she asked them to pair up and describe their own dream behavior. She did not analyze in her journal why these activities worked. On the other hand, she wrote that students were "confused" about other topics. Stacey reflected on the activities she had already tried. Her students "loved" a conditioning demonstration using a pigeon, and she found that referring to the

demonstration subsequently seemed to help students understand connections among different concepts. Perhaps, she wrote, she could use demonstrations similarly for other topics.

Stacey announced in seminar that her mid-semester student evaluations "didn't help at all." One student had written, "[Stacey's] a great teacher," and another complained about the laboratory experiment requirement. Recounting what Dr. Simpson had told her about evaluations, she said that, if she had received some more "critical" ones, she would know what needed improvement. "Please be honest. I want to know. Please tell me what I should change or what you liked, or what you didn't like."

In a seminar discussion about class assessment, Dr. Simpson asked what assessment techniques they would like to try, and why. Since her "philosophy of teaching is having [students] be able to apply the information," Stacey said, she found an "application card" assessment technique rather intriguing. She realized she was not as skilled as she would have liked in providing students with ways to apply course material, and hoped to do more the next semester. Why wait, asked Dr. Simpson. "You could do a specific application exercise where you just say, 'Okay. Write for two minutes. Think of a real world application of *this* concept.'" Especially since her class was so reluctant to talk, she said, the application assessment might give Stacey valuable information about whether her goal was being met.

The seminar meeting before Dr. Marcello came to talk about the major course change the cohort would make to their spring courses, Stacey asked Dr.

Simpson to clarify the requirement. "I'm not exactly sure what a major change would be." He is looking "for you to take a risk," explained Dr. Simpson, to make a fundamental course change based upon learning and teaching goals. "It *is* really teaching a different course," she said.

After clarifying the assignment, Dr. Simpson said, "Let's start, as usual, with teaching check-ins, teaching dilemmas." Stacey was the first to speak. She had no dilemma, she said, just a surprise. Now that the semester was a few weeks from being over, it seemed that her relatively quiet class was suddenly coming alive. Not only were students speaking up, she felt as though she was "connecting" with them. Why did she suppose that was happening, asked Dr. Simpson. Did it feel as though students were "finally getting comfortable enough with each other? Does it feel like there's a piece of that that will carry over because you've learned something that gets them talking more?" Perhaps, answered Stacey. In the beginning of the semester, she said, she "didn't know what I was doing."

Stacey noted several classes in her journal that worked especially well. The module on social psychology, she said, was "fun" because she was confident about her understanding of the material. In the next semester, she would, however, substitute the topic of attractiveness for another, as students "didn't seem too interested." She was excited about student reaction to some of the information in the social psychology module. "I know I'm partial, but I would like to extend this section one day because I feel there's a wealth of information

and demos that could be used here. Social is more obviously relevant to them. I think they can more easily make connections between the material and their own lives."

Dr. Marcello coordinated the next seminar, and asked participants to describe the major course change they would make in the spring semester. Stacey was the first to respond. One of her teaching goals for the fall, she said, was to engage students through active learning. "Upon reflecting on my teaching," she said, "I find it's not really something that I've lived up to. I've spent a lot more time lecturing, probably, than I really wanted to." She had probably done this because of anxiety that she needed to "cover everything"; at least, that was her feeling at the beginning of the fall semester. As time went on, she discovered that, as she lectured less and asked more questions, her quiet students became talkative. She began asking more frequently for written student response. "It's engaging them more," she said, "and I really like that." This kind of engagement was something she wanted to design into her spring course.

Besides her lecturing, she realized that the two papers she assigned had not reflected her course objective to have students apply course concepts to their lives. Paper assignments, then, would be changed.

> What I thought was, I want to make the papers more reflection-oriented, based upon *actual* experiences. I'm going to have two papers. The first one is going to be based on a service-learning component. I want them to engage in a service learning activity at least once during the semester. I want them to be able to choose any area they want.

One reason she came up with this idea was the "surprise" she experienced when she read some students' papers in the current semester. One student, a zoology

major with experience working with animals, applied course concepts to animal intelligence. Stacey said that she could not assume that every student would bring relevant experiences to the course, so she would give them one. As an undergraduate, she had coordinated a service learning project and had some experience in the area. Next semester, her students would volunteer in social organizations like soup kitchens and homeless shelters. In this way, they could gain experiences that she would then ask them to apply to course concepts. For example, she said, volunteering at a day-care center might give them some experience with developmental psychology issues. Besides a 10-15-hour service component, students would write a paper reflecting on their experience. "I want them to [say] why it matters, whatever they learned in that area." "I feel like I made tests and evaluation more important than the experience this year," she said. "I don't want to do that next semester. I want [assessment] to be based on their experiences."

"What a great idea!" said Dr. Marcello, smiling. "Fantastic." Think carefully about which course topics could best be applied to a service learning experience, he advised, and be prepared to do "a lot of extra teaching." What was the reason she chose service learning, he asked. Stacey replied that she felt it would both involve students and give them "a sense that they did something good."

"What have been your greatest challenges, and where do you see your greatest growth over the course of the semester as teachers?" asked Dr. Simpson in the last seminar of the semester. Stacey was the first to respond. In the beginning, she was not confident that she knew enough about all the course

material to respond effectively to student questions, but found that it had been "a lot easier than I expected." She had watched herself become more confident about responding to student questions and "building discussions." Though her course evaluations were quite good, and she felt that her first semester had been very successful, Stacey reported in an interview that she recognized the need for change. She now believed that "covering all "of the course material was unnecessary, and credited student comments about the pace of her lectures to her new sensitivity about how students reacted to her lecture style.

Analysis

For most of the semester, Stacey's journal exhibited little more than a descriptive account of her class methods and materials, the "general and rather superficial evaluation" of experience that rarely went beyond "the lesson went well" (Tann, 1993, p. 61). She did not use words like, "problem" or "dilemma," or note that she was concerned or worried about what went on in her classroom. In seminar, she did not regularly frame problems about her teaching, or engage in, on her own, analysis to address them, although she often contributed to the dialogue about other members' issues.

Two areas emerge as potential loci for reflection. Although Stacey did not engage in the deep processing modeled by Dr. Simpson, it is possible, by examining her journal, course materials, seminar observations and interviews, to investigate the factors that identified these as issues to think about, to examine her behaviors in doing so, and to speculate upon the influences that contributed to the reflective process she engaged in.

Apparent most often as a counterpoint to seminar discussion, a tension slowly emerged between Stacey's preference for the lecture style and the active learning teaching methods that appeared to be valued by the teaching program. More visible, but only after she had devised solutions to a previously unstated problem, was Stacey's thinking about her course goal of applying psychology to student lives.

Lecture. As might be expected in a new teacher, Stacey's course material, and the manner in which she delivered it, gave her some confidence. Her opening journal entry describes a telling dynamic (one which was not characterized as a problem). Students focused "attention on me" (her Power Points and her "definitions"), and wrote notes when she allowed them time to do so. The only "problem" she intimated was that she spoke too quickly.

Why would she *not* feel confident? The substance of her lectures had been carefully designed and reviewed by Dr. Simpson over the summer. Modules integrated very detailed notes with Power Point slides and test banks that had been scrutinized for their relevance and suitability. Stacey researched many sources to locate material from which to build her lectures—other than the textbook she assigned to students. The textbook she selected was a "short version" which did not contain the large amounts of information typical of introductory psychology textbooks. Students would be exposed to the information they needed to succeed on tests primarily from one source—her. She did not expect or even prefer that they gained significant knowledge from text reading. In

fact, she suspected they did not read the book, and never described this as a problem. In one sense, the text, because it threatened to "steal her thunder," was seen as a rival.

On the surface, then, Stacey succeeded in creating an environment that allowed her to maintain control of classroom dynamics in a way that students seemed to like. Revealing a technical level of thinking, her actions imply some assumptions: students would not find class material engaging if it duplicated the text reading; students could learn what they needed by attending to what she had to say; good test scores evidenced student learning (Schon, 1983; Valli, 1997; Van Manen, 1977). This instrumentalist orientation reveals Stacey's focus on "making the teaching/learning process more effective and efficient" (Valli, 1995, p. 12). LaBoskey (1995) identified "Common-Sense Thinkers" as preoccupied with the "structural features of a task," rather than the complex interaction of factors (the classroom situation, teacher assumptions and beliefs) that, upon examination, would result in informed action (p. 32).

Stacey constructed a situation in which her lectures became essential for student success—and it seemed to work. Test grades were high. Students focused and took notes ("I don't get them falling asleep"), and course evaluations were excellent. As well, Stacey maintained a good relationship with her students. She learned their names, gave tests they considered fair, and gave them time to take notes. Everything seemed to be going well, so it is not surprising that she did not, at first, identify problems and so set into motion an analysis aimed at solving them. Put simply, Stacey felt no "difficulty" (LaBoskey, 1995).

Dewey (1933) proposed that, in order to learn from experience, learners must observe with a critical eye, that is, to "understand the significance of what they observe and to make judgments based upon such understandings. 'Observations' need to be focused, not just on means-end relationships, but on the relationships between means. The ends also need to be examined and their inter-relationships examined" (Tann, 1995, p. 56). In Stacey's case, this would have been demonstrated if, instead of simply describing that students ardently took notes when she paused, she speculated about *why* they did, why she felt a need to create a situation that rewarded them for doing so, and, ultimately, the relationships among their note taking, their test performance, her lectures, and their learning. Because, in the beginning of the semester, she did not "step back" to critically observe class behaviors, she was not prompted to move beyond habitual ways of thinking about those factors (Gitlin & Teitelbaum, 1983). To do so may have led to a sense of self-doubt and uncertainly that Stacey, like most beginning teachers, was working hard to avoid. Her instrumental stance prevented "more consequential questions from being asked: the question of determining what is, in fact, most worth the students' while, with respect to both purposes and experiences provided by the curriculum" (Van Manen, 1977, p. 209). Significantly, because student feedback was so positive, she had little impetus to investigate what she was doing.

Calderhead (1989) listed several possibilities for novice teachers' disinclination to analyze and evaluate their practice. These include the simple reality that they "have little time to consider how the lesson is actually going," the

risk of ego injury if they begin examining, and a surfeit of the analytical skills and language with which to investigate their practice (p. 46).

Examination of the ways Stacey talked about lecture, however, suggests that, even at the beginning of the semester, she sensed a tension between what she had constructed and its correspondence with what the teaching program valued. That is not to say that, like her former professor, she lectured without break the entire 50 minutes of her class time. She did employ group work, written assessments, demonstrations and some activities. Nevertheless, she was the sole presenter of definitions and concepts students would be tested on, and her lecture constituted a significant amount of class time. By her own admission, unless she had learned about "interactive learning" in the seminar, she would have done nothing *but* lecture. Stacey did not come to teaching with well-examined beliefs about the value of active learning or of lecturing. In fact, an early comment indicates that she may have had an unexamined assumption that might have interfered with such reflection. The "most important part" of teaching was "getting through" material, she said. Perhaps as an indication of conflicting beliefs about what she assumed and what she was expected to do in her classes, she immediately contradicted herself, saying that it was only "sometimes" the most important.

A significant impetus for Stacey to examine her assumptions may have come from the dialogue in seminar meetings, where Dr. Simpson and the other participants analyzed their teaching behaviors in ways that Stacey was not inclined to. Modeling a way to critically "observe" a teaching technique (and

thereby problematize it), Dr. Simpson asked, "Why would you want to use discussion in your class?" Stacey's reply contradicted her first journal entry, which did not describe the students' focus on her as a problem: "It takes the focus of you," she replied to Dr. Simpson. Was Stacey examining her own behavior in light of the value the seminar group obviously placed on more active learning approaches than lecture?

Although she cautioned them to employ discussion only after justifying its use, Dr. Simpson (as well as Marcus and Julia) consistently indicated a prescriptive assumption that they *should* employ active learning techniques (Brookfield, 1995). For example, Dr. Simpson included discussion as part of the genus of "things that we hope are going on in our classes," and contrasted it with a situation where the teacher was seen as the repository of knowledge. She rebutted the claim that control through lecture was a suitable goal by defining it as a teacher-centered, rather than a learner-centered, approach. Although she said that lecture should not be discarded, she described it once as "talking at" students. While they had been assigned one reading that questioned the practicality of active learning in the classroom (Mattson, 2005), the criticism was of a pragmatic nature, and all of the other readings assumed that good teaching used active learning methods (Bonwell, 1996; Davis, 2001; McKeachie, 1999; Welty, 1989). The "learning milieu" Stacey was situated in, "the totality of the human and material influences which impinge on learners in a particular situation . . . [including] co-learners, teachers, learning materials, the physical environment and everything which [is] to be found therein," seemed to question assumptions

about control and learner success that, at least at the start of the semester, Stacey had not considered (Boud & Walker, 1998).

What evidence is there that Stacey was influenced to risk questioning her teaching method? As the semester progressed, it appeared as though she began to engage in a sort of "counter reflection" about active teaching methods; that is, she described problems with discussion and active learning, implying that lecture did not pose such problems. For example, in seminar she said that crafting discussion questions was not as "easy" as she thought. How could "control" be maintained, she asked, if some students commandeered a class discussion? She identified as a "problem student" someone who interrupted her lectures with comments and questions that she felt unprepared to respond to. In an email to Dr. Simpson, she listed problems with discussion: student anxiety and alienation, and "painful" silences when students did not respond to teacher questions. Besides, she insisted, students had clearly indicated to her that some "don't like to talk," that there was "nothing you [could] do about it," and that her students expected "straight lecture" and resisted her attempts to do otherwise.

In response to these justifications, the seminar group proposed alternative ways of framing the problems. Dr. Simpson acknowledged the difficulty of designing discussion questions, implying, however, that this was no justification for wholesale abandonment of the method. She countered Stacey's argument that her students resisted anything but lecture by modeling ways to reflect upon the issue. She immediately moved the locus of the problem from the student to teaching goals by asking, "Is our objective really for them to learn this huge body

of terms?" She then gave "evidence" that this reframing had merit by describing the beliefs of other psychology faculty about "covering material." She signaled the importance of this reframing by speaking for several minutes, contextualizing the issue by situating it in a larger debate about the ultimate goals of teaching. Although she intimated that her students may have preferred lecture because they knew its importance for test success, she did not indict Stacey or the rest of the group. Instead, she explained that they were all involved in a debate about learning and teaching, a constantly changing conversation that demanded their willingness to observe, assess, and change. In these ways, Dr. Simpson modeled for Stacey a level of reflection beyond an analysis of "what works," assessing teaching practice in terms of what was "acceptable and not acceptable for us to do" (Boud & Walker, 1998).

There is some evidence that Stacey experimented with teaching methods beyond "what worked," although it is not clear whether she did so because she reflected upon her assumptions or because she understood that it was expected of her. Rather than assume student attention and note taking evidenced learning, she instituted regular in-class assessments to determine what they were confused about, and responded by revisiting topics. She justified this by revealing an assumption about her teaching responsibility: "If half the class doesn't understand, then I'm not doing my job very effectively." She began noting student reactions to class activities. Although she did not often, in a public manner, analyze her assumptions about why she felt activities "worked" or not, she did discover that student attention to the pigeon demonstration helped her

explain similar concepts in reference to it. She also noted that a demonstration could have worked better had it been related more closely to her lecture.

On another occasion, Dr. Simpson provided Stacey with the seed from which to develop more reflective thought when she reacted to her seminar statement that her class was suddenly "coming alive" after mid-semester. Rather than acknowledge this as a mystery, Dr. Simpson asked Stacey to consider that it was consequence of her own behavior. By asking her to examine the causes of student behavior, and to consider her own teacher's role in it, Dr. Simpson was presenting herself as a "change agent" by modeling a way to critically observe teaching practice, the first step in the reflective process (Calderhead & Gates, 1995).

By the end of the semester, Stacey was able to, though in little detail, characterize her initial teaching behaviors as indicators of ignorance ("didn't know what I was doing"). She admitted, that, though this had not been her intent, she had "spent a lot more time lecturing" than engaging students in other activities, and that she now recognized the disjuncture between the goals she had and the behavior she demonstrated. She said that she had a new understanding about how to "build" discussions, and seemed to realize that she needed to make changes for her spring class.

Stacey's thinking about lecture does not seem to correspond with Dewey's (1933) description of the "active, persistent and careful consideration of [a] belief or practice in light of the reasons that support it and the further consequences to which it leads" (Zeichner & Liston, 1996, p. 9). She never publicly investigated

her assumptions about the use of lecture or active learning, though she operated within an environment that frequently did so. However, the remarks she made at the end of the semester indicate that, after an unrevealed thought process, she had at least begun to "try on" the vocabulary of new understandings about the reasons behind some teaching methods.

Application. In contrast to the tentative conclusions Stacey emerged with about the relative merits of active learning and lecture, she was able to articulate some of her reasoning as she reflected upon a major course goal—application of course concepts to student lives. However, this occurred on only two occasions, the seminar session in which she explained to Dr. Marcello and the group the major course change she intended to make for the upcoming semester, and the teaching portfolio composed at the end of the spring semester.

Indication of Stacey's commitment to application was evidenced, but not detailed, twice before that session. First, her syllabus clearly listed application to student life as a course goal. A few weeks into the semester, Stacey indicated in seminar that she wanted to try an "application card" technique to elicit from her students the connections they made about course material and their lives. Significantly, however, it seemed as though she did not intend to change her course materials that semester to accommodate the activity until Dr. Simpson suggested it.

The precipitating event that appeared to prompt special attention to application was Dr. Marcello's course change requirement that Stacey reported on shortly after mid-semester. Although we have no evidence of Stacey's

reflection beforehand, her words in seminar indicate she had engaged in an assessment of class behavior in light of course goals. She began her description by saying that, "upon reflection," she realized that she had not "lived up to" her goal of helping students apply course information.

Although it is questionable that she would have devised her new plan entirely upon the merits of one incident, Stacey said she was prompted to by a "surprise"—a zoology student's application of her experience with animals to concepts of intelligence. In response, she constructed two paper assignments for the following semester in which students applied information to their lives. The most significant response, however, was her decision to institute the service learning component. As she explained her proposal, she hypothesized that students needed to experience an event that they could internalize in order to relate their understandings of the event to course concepts. She revealed that she had speculated about ways in which this might be realized when she gave examples about how experiences in food banks and day-care centers might be relevant. Evidence of her reflection was her speculation that helping others would result in students feeling "good," and that this feeling might prompt the behavior she hoped for in the assignment. She implied that she had thought about the ramifications of the service learning component by indicating a need for a revision of course assignments, and by realizing the need to seek additional resources.

It is impossible to determine whether Stacey reflected upon application and made a subsequent course change because she had carefully examined

evidence, framed a problem, and analyzed assumptions to justify a new action. She had never, during the course of the semester, indicated a "felt need" relative to application, never said that she was troubled by her inability to help students apply concepts to their lives. It may be the case that Stacey enacted a change simply because she was required to do so, and, in the process, reflected upon her course goals. Given her own student experiences with service learning, she may have assumed that her students would respond as she had. Dr. Simpson and the seminar environment had embraced a prescriptive assumption about what "ought to be happening" in a learner-centered classroom, and, in reaction, Stacey made some changes (Brookfield, 1995, p. 3). It appears that the same dynamic may have been operating in her decision to change the way she addressed the course goal of application.

Evidence of this assumption comes from the way she explained her thought process. She did not detail to Dr. Marcello and the group why she believed that application was important (although this reflection may have occurred prior to the beginning of the course). Rather, she explained that her assignments did not result in evidence that the goal of application had been met—although it seemed as though she had not pondered this connection as late as a week before she came up with the service learning plan. It seems, once again, that her thinking was technically oriented, a process to discover "the means of accomplishing a particular goal," rather than an examination of the propriety of that goal (Valli, 1995, p. 12). The scope of Stacey's reflection, at least as described from available evidence, was limited to thinking about how to

elicit student performance of a "predetermined task" (Zeichner, 1983, p. 4). Boud & Walker (1998) include, in their examination of different characteristics of novice teachers' reflection, a caution that, sometimes, novice teachers "reflect on demand," engaging in a linear analysis of a simple problem that results in a simple solution. Because the course change demanded by Dr. Marcello was expected to evolve from an examination of unmet course goals, Stacey may have responded in the way she did, not because she was troubled by her lack of success to meet her course goal, or because she had been engaged in continuous reflection about it, but because it was expected of her (Hatton & Smith, 1995).

The Spring Semester

Narrative

Stacey's spring class of 50 was largely comprised of first-year students, but contained a number of upper class students as well. Her spring syllabus indicated the changes she described in the fall seminar. Three topics were dropped altogether, and, generally, two days rather than three were devoted to each module topic. Stacey justified these changes by saying that she intended to cover fewer topics in more depth, and that she got "rid of a lot of material that I just haven't had time to cover."

The Power Point slides that anchored her lectures also underwent some revision. Although the average number of slides used for each module increased by four in the spring semester (33 to 37), because she was covering fewer units,

fewer slides were used overall. As well, Stacey often changed the text that appeared on the slides:

Fall: Memory - Refers to the capacity to retain and retrieve information and also to the capacity structures that account for this capacity
Spring: Memory - The capacity to retain and retrieve information
- The structures that account for this capacity

Fall: Psychophysics - Absolute thresholds
- Subliminal stimuli?
- Subliminal perception?
- Difference thresholds
Spring: Psychophysics - What stimuli can be detected?
- At what intensity?
- How sensitive are we to changing stimulation?

Stacey's spring syllabus duplicated much of the fall's, although the service learning component comprised 50% of the grade. Students were to complete 10-15 hours of volunteer service at a local agency, for which they would be assessed by the agency supervisor, write a five-to-seven-page paper, and give a class presentation. She described the service learning project as a way to "connect my philosophy of teaching to introductory psychology." It was a way for students to "learn more by engaging in experiential, hands-on learning than you will by hearing me in lecture." The paper and related class presentations and discussions and would give students the opportunity to "integrate" course concepts with their experiences in the field. In that way, she said, "you will be able to really apply psychology to everyday life." In the paper, students would briefly summarize what they did at the agency, explain whether and how the experience enhanced understandings of course material, and describe what they had learned about themselves and others. Finally, students would reflect upon the experience:

> What did you do that seemed particularly effective? Ineffective? What changes would I make to the program or to my own actions in the program? How can I use what I learned through experience in my future coursework or in my future career? Will you continue to be of service in the future? Why or why not?

In an early seminar, Stacey said she was apprehensive about the way students would react to such a significant work commitment. After the first week of class, however, she was encouraged when the university's service learning coordinator briefed her students about their obligations. Students seemed "activated," Stacey said, and appeared to be thinking seriously about the project. "Now they know that they can't just sit there."

When the seminar discussed the use of Power Point slides to anchor lectures, Marcus indicated that passive student behavior might be encouraged by their use. Dr. Marcello suggested that slides should contain speaking prompts, but not large amounts of text. He agreed with Marcus that overuse of Power Point might encourage note taking rather than information processing. Though she did not disagree, Stacey said she had tried to avoid passivity by including discussion questions on her slides. She hoped this sent a message to students that the purpose of slides was not just to provide text for note taking. Another caution about using Power Point, said Dr. Marcello, was that they might give students the impression that complex topics in psychology could be reduced to a brief list of bullets. Stacey admitted that she felt confident when she had a bank of Power Point slides around which to base her lecture. This was a behavior she needed to disengage herself from, she said, "because you have to learn to be confident without using Power Point." The key, replied Dr. Marcello, was to use

the technology purposefully. Blanking out the Power Point screen when they wanted students to engage in a discussion was a good way to convey the message that their classes were not places where students just sat back and received information.

By class time in the third week of the semester, 38 students had arrived in Stacey's class. Dressed in a black jacket and pants, Stacey spent a few minutes testing her knowledge of student names, and knew almost all.

She began by reminding students what they had discussed relevant to developmental theories in a previous class. Her voice was loud, and she spoke rapidly while looking at the students and moving back and forth across the room. Although she occasionally looked at her notes and referred to changing Power Point slides, she consistently looked at students, often smiling, while she talked. As she spoke, students busily took notes and looked at the slides. When she gave definitions or concepts, she often repeated them, allowing students time to take down the information. After about 12 minutes of speaking, she asked if anyone had questions. No one responded. She repeated this pattern of lecturing for several minutes and asking whether there were any questions. Most often, there were none.

Half-way through her explanation of Erikson's developmental stages, she wrote "Identity" on the board and explained its relevance to adolescence. Without first explaining the term, she asked the class to "think back to your middle and high school thought process," and then tied two hypothetical examples into Erikson's stage, without asking students for examples.

Stacey departed from this pattern of lecture-question-lecture-question when she introduced Kohlberg's theory. First, she read a "moral dilemma" story about a man whose wife was dying of cancer. Asking students to write their responses to the question, "Should the husband have stolen the drug?" she then characterized and recorded their responses on the board. One student sitting in the front row said, "Cancer is nature's way of keeping the population in check." Many students gasped, and several put up their hands. A lively discussion ensued, and Stacey interrupted often with prompt questions.

Ending the discussion, Stacey said that Kohlberg would have been interested, not in the answers students gave, but in the reasons they used to justify them. Then she pointed to answers on the board and asked students to describe the stages in which they would be classified. Students readily responded..

"What have you got to report?" asked Dr. Marcello in the next seminar meeting. After a brief silence, Stacey described that her class was "going well." Her class "talked for a good 20 minutes" about moral reasoning, and she was "really impressed with their level of thinking." Then she described the class reaction to the remark that cancer was a natural population controller. Not knowing what to do, she said, she invited other students to respond. "Class discussions should never be allowed to get "vitriolic," Dr. Marcello said, and described an experience from his own class. "That's one of the pitfalls of bringing up subjects like that. You have to remind people that it is an intellectual discussion."

A little later in the meeting, Stacey said that she had received comments from students that she spoke too quickly when she lectured, and that she repeated herself, saying the same thing, or slightly rephrasing it, more than twice. She wondered if anyone had ideas about "how I can slow down. "I repeat what I'm saying quite a few times, but I still move too fast." Sometimes she felt she was "getting into that monotone" as well. She had revised her Power Point slides so that they contained only brief amounts of text, so she did not think they were the source of the problem. "It's hard for me to understand that I'm moving too fast, because I really don't feel like I *am*." Marcus wondered if her perception of speed differed from that of her students. Christian suggested that she may have been giving too many examples, which, from his experience, "bored" students. Rebutting him, Stacey said she felt that her students were thinking about, not bored with, what she had said. Dr. Marcello said he would be sure to keep the issue in mind when he observed her class. Had she asked her students about it, he asked. She had not, but decided that might be a good idea.

Dr. Marcello's observation of Stacey's teaching occurred a few days later. He sat in the back of the classroom and took notes. Stacey began class by projecting a slide titled, "Physiological Psychology." Before she began lecturing, she told students that some of the material they were going to cover would be a "breeze" because it focused on biology. Other material, however, might give them more difficulty, and, for that, she would "take time." "Please ask," she said, "if there are any questions. Yell, 'Stop!' or, 'Slow down!' if I go too fast." Students laughed.

As Stacey lectured, she spoke rapidly in a loud voice, and often repeated definitions of terms several times as students took notes. She explained the function of the nervous system, and, after about ten minutes, lit a match to show how she automatically moved her finger away when it came close to the flame. She reinforced this demonstration by explaining a slide about the "spinal reflex." Midpoint in her lecture, the Power Point projector stopped working, so Stacey lectured without benefit of slides. Students took notes and occasionally asked questions.

After class, Stacey met Dr. Marcello in his office to talk about the class. "Overall," he began, smiling, "I think you handled the class well," especially considering the malfunction with the Power Point slides. Stacey said that she was "happy to get questions" from students, two of which she had trouble answering.

> Dr. Marcello: I was going to comment about your response. When you responded, your voice lowered . . .
> Stacey: Yes, I know. My voice lowered.
> Dr. Marcello: Always repeat the student's question aloud. This serves two purposes. First, everyone else can hear the question, and then it reinforces the student. Think of when you were a student. When a professor repeated your question, it was a sign of respect. You should be promoting questioning behaviors.
> Stacey: I should have said I didn't know. He asked the same question in his "muddiest point" paper. I should find out and address it the next class.

Dr. Marcello agreed. Her behavior, he thought, may have been interpreted by students as "dismissive, non-approving."

Was it "okay," she asked Dr. Marcello, to be so repetitive when she lectured. Her professors had always repeated important concepts and definitions,

and she had adopted that behavior. Dr. Marcello paused. "Well, people learn best when information is put into their own language. Encourage students to focus less on note-taking and more on their learning. You might say, 'Unless the wording is important, I prefer students *think* about what I've said, rather than getting down the precise wording. Your wording.'" He told Stacey not to be so concerned about "getting the definitions down," as students could find them in their textbook. "Concentrate instead on helping them understand the concepts."

Her voice was loud and clear, Dr. Marcello noted, and she maintained consistent eye contact. "I tried not to look at my notes," she said. Referring to notes is acceptable, he replied. After years of lecturing, she might feel comfortable without them, but, for now, using them was to be expected.

In the remainder of the session, Dr. Marcello, smiling and in a pleasant voice, indicated where Stacey had made mistakes about or omissions to information about nerve function. Although she was polite in response, Stacey sometimes rebutted his claims.

> Dr. Marcello: You left out cognitive, emotional, and you might include them as well. In fact, it may have left students with the wrong impression about the functions of the central nervous system.
> Stacey: I was going to talk about this when we talk about the brain.
> Dr. Marcello: Also, you were talking about the somatic system, but it is a sensory system as well. You never said what a skeletal muscle was.
> Stacey: I just assumed that they would have had that in high school.
> Dr. Marcello: I wouldn't assume that.

He explained the connection between the nervous system and the muscles, saying that omitting important information might interfere with students' ability to fully understand how the system functioned. "I didn't know any of that," Stacey

replied in a low voice. "Of course not," said Dr. Simpson. "You're still learning. After 27 years of teaching this, I still don't know everything. I wouldn't feel badly about not knowing everything." He gave examples of class activities and demonstrations Stacey might use, in addition to her lecture, that would enhance student learning. As far as using Power Point slides, he said, "You always want to couple what you say with a picture." "This [first observation] is the hardest time," he said as Stacey readied to leave. "Don't feel like you need to know everything."

In an interview immediately after the review session, Dr. Marcello said that there were many reasons for these meetings, but one of the most important was that they allowed him to "correct erroneous material." As well, his observation of a class would differ from the graduate students', and it was valuable for them to hear another perspective. While it would be a "disaster" if they were too self-reflective at this point in their teaching, he said, the session exposed them to someone else's reflection about their behavior. It had never occurred to him that the review sessions might serve as a reflective model, but he was in favor of anything that might foster reflective thinking. In fact, he had insisted that promotion and post tenure reviews of professors in the psychology department include a written reflection of teaching.

In a subsequent interview, Stacey said she appreciated the advice Dr. Marcello had given her after the class observation and that she could learn much from his expertise. His suggestion that she may have been dismissive in her response to student questions was insightful: "I'm *trying* to be more aware that

I'm doing that, and I find that I still sometimes do it. I just have to start remembering to repeat the question."

She said it was difficult to tell if her class asked as many questions as the fall class because there were so many more students. When she prepared lectures, she tried to build in "little breaks here and there. Questions. Things I might want them to think about. Group work. A clip from something." She had never intended her class to be dominated by lecture, "but it's sometimes hard to find things that will fit into a class." She credited the seminar discussions with her growing awareness of the need to use a variety of teaching methods, but, in fact, she still considered as one of her biggest challenges knowing what material to cover.

She did not often ask questions of students, she said. Not many students consistently asked questions either, but she was apprehensive when a certain few did because they sometimes asked questions she did not know the answers to: "Oh, God, here we go again." When she did not want students to participate, she simply did not ask questions, a strategy she used when showing videos or "covering material." She said she called only on those students whom she felt would not be embarrassed by answering. However, "If I need participation, they generally participate. Students generally did not ask many questions, she thought, because they had only partial understandings of the information, and that may have been because they were not reading the text. This "worried" her because it may have indicated that students were not processing the information

she presented. She had purposely chosen the short edition of the textbook:

> I feel like the textbook steals my thunder sometimes. Sometimes I'm glad that they may not read beforehand. I think that makes it more interesting, because, if you've read about it, and then you're coming to class and just hearing about it again, it's kind of, like, "Okay. I just read about this. This is really boring!"

She was especially sensitive about how few students asked questions the day Dr. Marcello observed, and wondered now whether her behavior really did discourage them from asking. Perhaps many were reluctant to speak publicly in such a large class, she said, and preferred speaking to her, and emailing, after class.

"Anything happen in class this week worth discussing?" asked Dr. Marcello the next week. After several minutes discussing class matters, Stacey said she was "worried" that several people scored a grade of D or lower on her recent test. Surprisingly, some of them were her "talkers," students who regularly spoke up in class. However, when she returned the tests, none said a word. "They watched me. I'm not sure what I'm going to do." As she had done in the fall semester, Stacey did not test students on the material they were required to read in the text. The text's purpose was to provide "background knowledge," as her tests were based on her lectures. She "had no idea" whether students read the text, but "I'm assuming that they *are* thinking about what I'm actually talking about. They wouldn't understand what I was talking about if they didn't." She was concerned that her students' reluctance to talk about the test indicated a "change the class structure." Christian said "it should just work out," but Stacey continued

to explain that, after looking at her students' tests, those with low scores missed very "obvious" questions. "Have you thought about speaking with them individually?" asked Dr. Marcello. Stacey said that she had written on their tests to come see her, but she doubted that they would. How did she word the request, Dr. Marcello asked. "You should really come see me about this," replied Stacey.

Dr. Marcello described how he might react to Stacey's written comment if he were a student, and suggested that she reword: "Sarah. I'm really concerned about your grade. You do a wonderful job speaking up in class. You contribute a lot, and this seems completely out of character. Would you mind coming by?" This approach might seem more welcoming, he said. Marcus agreed, saying that he was particularly careful about how he worded correspondence to students. He like to frame messages using a "we" perspective, rather than, "You need to do this." Dr. Marcello agreed, saying that it was useful to "adopt the point of view of the student who's embarrassed already at performing poorly." Stacey said she would try the new approach in an email.

At the end of the week, 30 students had arrived in Stacey's class by the time class began. She began by projecting a slide of the brain, and then told the story of Phineas Gage, a brain injured patient who exhibited significant behavior changes after his accident. She frequently referred to the notes in her hand, but spoke in a loud voice and maintained eye contact. She repeated information, and her spoken words corresponded, often, to the words she had written in her notes:

> Spoken: So Gage was really one of the first case studies that informed us of the specialization of brain areas . . . so his case informed us of the specialization of these brain areas, so certain areas do certain things . . . and he was also one of the first cases that

really, really informed us about the ultimate link between brain and behavior.

Written: Gage was one of the first case studies that informed us about the specialization of brain areas and the ultimate link between the brain and behavior.

Spoken: Now, if you remember when we had the brain in the classroom, and there were two different hemispheres, two different sides of the brain that you pick up, and put them together and form what looked like the whole brain? That's because the brain *is* divided into these two hemispheres, the left and the right hemisphere. We have the left hemisphere of the brain, and the right hemisphere of the brain, and the two hemispheres are connected by the corpus callosum. The two hemispheres of the brain are connected by the corpus callusom, and the corpus callusom is a large band of neural fibers that carries messages between the two hemispheres.

Written: The cerebrum is divided into two hemispheres, the left and right. The two hemispheres are connected by the corpus callosum, which is a large band of neural fibers that carries messages between the two hemispheres.

While she did not read regularly from notes, or memorize them, Stacey said she knew them very well because she always practiced the lecture before giving it. This helped her, she said, reduce anxiety.

As she spoke, students took notes. After about 12 minutes, Stacey showed a short video clip about the different processing abilities of each side of the brain. When it was over, one student asked a question. Hesitating at first, Stacey responded:

> That's different. When you get into left- and right-handedness, you really get into a messy kind of area. . . . It's still the same as everybody else, as far as I know. . . . It's a messy kind of area. . . . I hope that answers your question. Um . . . left- and right-handedness is very complicated. I'll look into it a little bit more just to make sure, but . . . I'll get back to you.

The student asked a related question, and Stacey responded, "I would think, in a split-brain patient, it's kind of along the same lines."

Two volunteers responded quickly when Stacey called for them, and she conducted a demonstration simulating a split-brain patient. After the demonstration, several students asked clarifying questions and one student talked about what he had read in the textbook. "Yeah, yeah," Stacey said, enthusiastically. She asked the student to replicate the experiment he read about, and then asked the entire class to join. "How about everybody tries it, just to see how hard it actually is?" All of the students complied. When Stacey asked if anyone had questions, one student said, "I'm still a little confused," and asked her to clarify a concept about regions of the brain, which she did. Several students began commenting and asking questions, and Stacey both answered them and asked others.

"Any other questions before I move on to consciousness," she asked. After a brief question and answer session, Stacey began lecturing again. Her voice grew louder, and she spoke much more quickly than she had during the preceding several minutes. Referring to Power Point slides, she gave definitions, which she repeated while students took notes. Occasionally, she illustrated a definition with an example related to college students. Throughout the lecture, Stacey closely followed the organization, and often the wording, of her notes.

Two weeks later, Stacey distributed graded tests to students, telling them she was "really happy" about the results, and invited them to come by her office if they had questions. She began lecturing about memory, speaking quickly, often repeating, as students took notes. Her own words closely followed those in her notes and on the projected Power Point slide:

Spoken: Memory refers to the capacity to retain and to retrieve information . . . retain and retrieve information . . . so, to retain and to retrieve information. It also refers to the structures that account for this capacity, this capacity to retain and to retrieve information. . . . Memory refers to the ability to retain and to retrieve information and to the structures that account for that ability.

Power Point: Memory
- The capacity to retain and retrieve information
- The structures that account for this capacity

Written: Memory refers to the capacity to retain and retrieve information and also to the structures that account for this capacity.

After she gave the definition, however, she asked (a question not written in her notes), "What is one of the more important structures that is responsible for memory?" A student answered immediately. "The hippocampus. Right," said Stacey. The subsequent explanation of the differences between the brain's function and the computer corresponded to a great extent to her written notes and the text of the Power Point slide projected at the front of the room:

Spoken: Now, the human mind is pretty similar to a computer. When we talk about computers, we might talk about computer memory, computer languages, or computers talking to each other. . . . So, the human mind is really similar to a computer. . . . So, when we focus our attention on something, we can bring that stimulus into our consciousness, and become aware of it. So, if we want to remember something, we can bring that stimulus, that memory, into our consciousness and become aware of it.

Written: The human mind is quite similar to a computer. We speak of computer memory, computer languages, and computers talking to each other. . . . When we focus our attention on something, we bring the stimulus into our consciousness and we become aware of it.

Throughout the lecture, Stacey's spoken words closely followed her written notes. After Stacey guided students through a "Carrot Trick" activity, a student asked, "How do we know what's in long-term memory?" Stacey responded, "How do we know? I'm not sure what you're asking." Another student asked, since

Stacey had said that long-term memory lasts "forever," what would a memory be called that lasted "for a couple of days?" Stacey hesitated, "That's dif . . . ," and then asked the student to hold off on an answer until they came to the topic of retrieval in a subsequent class. Later, during Stacey's explanation of a memory experiment, a student asked for how long iconic memory lasted. Stacey replied, "We're going to talk about that in just a second." Near the end of class, when a student asked how information was "obtained" by long-term memory. Stacey replied, "Rehersal's not the only way that you can get information into long-term memory. We're going to talk about that more next week."

By mid-semester, Stacey said she was not as anxious about covering material as she had been in the fall. In fact, she had cut out information from the fall modules. "I do try to think about what I can cover in 50 minutes that's important."

As the semester progressed, her students began doing very well on tests, she said. Half the class had an A average, and the overall class average was a very high B. Many of her test questions asked students to apply information to events, and she had been pleasantly surprised at students' ability to do this.

While she had much to learn, she said, she felt herself a competent teacher. She cared about student learning, she offered "breaks" as she covered material, and she gave time for students to think. Her student evaluations at mid-semester were consistently high. Most students rated her as "fair," and she received high scores for "relating with students." On the other hand, some students gave her low scores for answering questions effectively. In written

comments, many expressed dislike and concern for the service learning obligation. One student said, "I'm really EXCITED about the service learning project. I really ENJOY it."

Stacey noticed she was increasingly sensitive to the connection between her own and her students' behavior, and this often occurred as she taught. "Today I realized all of a sudden that I *was* moving through [lecture] really fast, so that's when I started repeating myself. It looked like they were struggling to keep up with me." Sometimes, when students asked her to "go back" to material she just covered, she realized they had not understood or that she had moved too quickly. The previous semester, she said, she did not have this level of awareness. She imagined that, the more she taught, the more conscious she would be about her own and her students' behaviors. This new awareness gave her important feedback, she said. When students stopped writing and looked up at her, nodding their heads, she understood that "they got it." Sometimes, though, students seemed anxious as they wrote notes, whether or not they would later be tested on it. Perhaps she needed to be like another professor in the department who said, "Put your pencils down!" On the other hand, she thought that notes provided a means of "initial understanding" that students could review afterwards to increase their comprehension.

The week after spring semester break, 30 students arrived in Stacey's class on a warm spring day. She spent the first few minutes explaining the options students had regarding the dropping of one test grade, and started the class material with a Power Point slide. The day's topic was attitudes, and Stacey

offered a pattern of definitions and examples. When she defined "behavior component," for example, she gave an example of country music. Before she moved onto a third component, she summarized the first two. Then she repeated all three definitions, and asked if anyone had questions.

The "detailed notes" that Stacey was required to write for that day as part of her module construction contained both similarities and differences to her lecture. For example, definitions of terms were almost duplicates of her notes. She asked the class, "How many here think that if you know an attitude that somebody holds, you'll be able to predict what they would do in a certain situation?" Her notes read, "So, if you know what someone thinks or feels about something, you can predict what the person will do, right?" When three students raised their hands, Stacey looked at them and said, "Yeah? Well, you can't really. Attitudes are not the best predictors of behavior." In her notes, she had written, "Wrong, attitudes are actually poor predictors of behavior." For several minutes, her spoken words reproduced almost exactly what was written in her notes, until a student asked whether behavior was part of attitude. Stacey responded:

> Behavior is . . . part of the at . . . yes, it is. But . . . say that you know the cognitive component and the affective component, the way somebody feels or the way somebody thinks about it. You don't necessarily know that behavior, because they might not act in accordance with that. Understand? I know it's a little bit confusing . . . because behavior is part of it, but you don't necessarily know how somebody is going to behave.

As she explained the concept of attitude, Stacey frequently asked questions that tied the idea to student lives (attending a movie, drinking, smoking). Her notes read, "Have you ever gone to see a movie that you really didn't want to see b/c your friends were going?" She said, "How many of you

have every gone to a movie that you really didn't want to see, but you went because your friends were going?" In her written notes, beneath the first strategy to reduce cognitive dissonance, Stacey had an example of a health-conscious person who stopped smoking. When she gave an example of a health conscious person who smoked, and explained that the first way to reduce cognitive dissonance was to change the behavior, she then asked how the health conscious person might do this. When a student answered, "Stop smoking," Stacey said, "Exactly." In her notes, she had written, "stop smoking." Students listened as she told a story about the moral responsibility in a murder. While the lecture corresponded to the organization, and most of the wording, of the notes, occasionally Stacey asked questions like, "What's the application of this?" and, "What is the point of all this?" These questions did not appear in her notes. Although few students actually answered direct questions, they all seemed attentive, and someone always volunteered a response.

In one seminar discussion about the less-than-responsible behaviors of students, Dr. Marcello advised the group to "treat every student like he or she is your own child." "I think that makes a difference. I really do. It really did for me." In response, Stacey said she had been trying to "cut some slack" for her students who had not been fulfilling their service learning obligations. She had previously spoken to Dr. Marcello about her concern that 40%of her students, with only two weeks left in the semester, had not yet volunteered at an agency. Dr. Marcello said the first thing he wanted to say was that he felt she had been "so brave" to

attempt the service learning project in the first place. "I don't want you to give up on this yet," he said.

Marcus suggested that she should "think about what they're used to, what they're accustomed to." Within the university environment, he said, Stacey's project may have been an anomaly to students. Rather than allowing them to sit back passively, she was asking for a personal commitment outside of the classroom. "It's probably a very foreign concept to them." Dr. Marcello agreed, suggesting that they may have needed "a lot more coaching early on." Next time, said Stacey, she would have "strict guidelines in the beginning" for a project like this. She had clearly set out deadlines in the syllabus description, but "I didn't say they *had* to meet them, and I didn't have point structures for them." She had hoped to "empower" students by giving them the responsibility to seek out and volunteer in agencies. The university's service-learning coordinator had suggested that Stacey simply fail the students. "I can't just fail that many," said Stacey. Dr. Marcello said that the two should talk about the issue.

In an interview, Stacey described her students as "pushing against" the requirements of the service learning project. They seemed to resent the obligation. "They just don't want to do it." Some were treating the project as an obligation not related to their learning of psychology.

> It makes me feel like I'm a bad teacher in that regard, because I'm not being strict with guidelines. Which I almost feel like I *should* be, so when I *start* being strict with my guidelines, I feel like it's going to piss them off, because my whole email and my whole statement about, you have to have them in by next Wednesday. I feel really bad about doing that. I didn't want to have to do that. For those people who have not talked to me, they have no excuse. There's no excuse. They've had since January. They had all of spring break.

Others, however, were having a wonderful experience. "They're excited about it. They're learning. They tell me stories." Her hope (Dr. Marcello had suggested this) was that, once the semester was over, students would have time to reflect on the experience and "be glad they did it. If she were to institute service learning in the future, she said, "it would *not* be in a class of freshmen," although she might consider the project for upperclassmen.

A few weeks later, after students presented their service learning posters, Stacey said that those who completed the project seemed to find it a rewarding experience.

> At least 95% of them said they *really* liked doing it. Most of the comments were, "When I first heard about having to do service learning, I was really nervous." "I didn't think I'd have time." "I thought it was too much of the grade." "I thought I would hate it." And then it all turned into, "This was a *great* experience for me." "This is the best experience I've had in college so far." It took them a semester to figure it out that this was actually worthwhile for them. It was a lot of work. For some students, it didn't work out real well, but, for some students, it was great, and they're going to continue doing it, even though they don't have to.

One student explained his initial frustration at the assignment. He had no transportation to get to an organization, so he volunteered at an Alzheimer's unit an hour's walk from campus.

> He said, "So, you know, when I was walking there, it was kind of like, 'Ooooh. It's an hour's walk.'" But once he got there and he saw how happy they were and everything, walking back felt like it only took him five minutes because he had *such* a good time. He really wants to keep doing it when he can, even though it takes walking there.

At the "Fish Bowl" session near the end of the semester, Stacey and the rest of the cohort shared their experiences and advice with the eight doctoral students who would replace them the next year. Stacey said that her most

challenging and rewarding experiences centered around the service learning project.

> Rewarding in that the students are *now* starting to realize the importance of doing that, and a lot of them started to enjoy it. I got some good comments from them about it, and they're getting excited actually writing their papers on it. Punishing because it took a *long* time for that to happen, and they really resented me. It was pretty hard for a while there, getting them to actually do it, and getting all the logistics straightened out. It was a complicated mess for a while there. Both rewarding and punishing. And a lot of work.

In the teaching portfolio Stacey completed as a requirement at the end of the semester, she began her "Statement of Teaching Philosophy" by explaining how difficult it was for her to conceive of such a philosophy when she first began teaching. Because she continued to change as a teacher, it was difficult to encapsulate her beliefs, but she could now describe teaching as "rewarding, challenging, invigorating, and, at times, even a bit scary." In both semesters, she established "concrete goals" that reflected her philosophy that her teaching should "challenge and get students actively participating in their learning."

> It is my ultimate hope that students will walk away with an understanding and application of what psychology can do for them in their daily lives. Additionally, I want students to come away with new critical thinking and problem solving abilities. They are active participants in their own learning through their engagement in activities and discussions. My students sometimes surprise and challenge me with their questions and insight, but this insight informs me that they are actually learning something in my classroom and that my teaching strategies have been effective.

The section of the portfolio titled, "Statement of Teaching Competency," according to *A Guide to the Teaching Portfolio* (UNH, 2003), was designed to describe the connection between the teaching philosophy and teaching behavior. It represented an opportunity to reflect upon the teaching experience, "a 'lessons

learned' statement with an eye to using those lessons as a means of self-improvement" (UNH, 2003, p. 15). Stacey began by explaining how her syllabus design corresponded with the goals for her course. Although lecture was a major component, she used a variety of methods and materials to enhance the lecture and engage students in "active learning." "Activities in my classroom might include group work, such as identifying defense mechanisms from case studies, individually completing questionnaires on sensation seeking or stress, or discussions about the attribution of responsibility to characters in a story."

A week after classes ended, Stacey reflected upon her year of teaching in an interview. The seminar had been a safe place in which to address teaching issues, she said, and the guidance of Dr. Simpson and Dr. Marcello had been invaluable. Although she felt that she could have made more of an effort to reflect upon her teaching, she generally had not encountered problems that she could not address on her own.

Because of her attention to lecture, Stacey realized she had left little room for active learning methods like discussion, and thought that, in the future, she would actually build them into the class day. "That's something I'd really like to do. Learn how to juggle class so they respond this way, and I'm going to respond this way back. Be prepared for those types of interactions. That's one thing I have to work on." In the fall, she included activities and demonstrations because she thought she was expected to, not because she had thought much about how they connected to her course goals. "Now, I'm trying to fit in what I do more with my own goals and my own teaching philosophy."

Nevertheless, Stacey felt she had met an important goal. In the beginning of the spring semester, many students did not seem to realize the connection between class material and their lives. After the service learning project, however, "they started to say, 'This is the only class I've ever been in that's really connected what I've been learning to the outside world.'" This was important, she said, because of what she had learned from her own experience as an undergraduate working as a volunteer. "It was a powerful learning experience." She believed that college students did not often have opportunities that helped them understand the connections among their lives, the larger world, and the courses they were taking.

Analysis

The spring seminar focused less on classroom issues and more on broader academic life concerns, and may have, therefore, prompted less public reflection than the environment in Dr. Simpson's sessions. However, Dr. Marcello always invited teaching problems, and the group often engaged in analysis of the ones participants shared. Stacey's teaching journal was not available, although she said she kept one. On the other hand, her course materials, seminar and class observations, her teaching portfolio and interviews provide a rich body of evidence from which to discern the kind of thinking she engaged in about her spring teaching.

An aspect of her lecture behavior continued to be identified as a problem, but little else emerged as a consistent reflective focus. Near the end of the

semester, however, a significant problem arose relative to the service learning project.

Lecture. In the fall semester, Stacey exhibited some conflicting feelings about the appropriate use of lecture, given the expectations of the program to use active learning. .

As in the fall, the protocol of Stacey's classroom influenced what she identified as problems. The important information in the course, the information students would be tested on, came from her lectures. Not surprisingly, there were no problems with their attention, their note taking, their test scores. Her teaching modules had been vetted by seminar faculty. Because her student behavior mirrored her prescriptive assumptions about what "ought to be happening" in the classroom, she was not prompted to identify problems (Brookfield, 1995, p. 3). Nevertheless, as in the fall, student feedback on evaluations raised issues she had heard before—she spoke too quickly and did not answer questions effectively.

Although not exclusively, Stacey's "default" teaching method was lecture. An indication that she regarded it as such was that she described any other methods, like discussions, class activities, visuals, as "breaks" that she "fit into" her lecture. Students had identified her speaking speed in lecture as a problem. She had attempted to address it, but students continued to complain, so she brought the issue to a seminar session. The way she framed the problem was indicated when she asked the group for advice on how to "slow down." As she had in other matters in the fall, she defined the issue as a technical one.

Perhaps because students' written evaluations made her sensitive to the issue, she observed her own behavior one day and suddenly realized that she was "moving through" class material quickly. One reason this was a problem, she said, was because, when they were taking notes, students may not have been doing the mental processing to understand what she was telling them. The data do not reveal Stacey's consideration of this hypothesis, and her conclusion that she should require students to put their pens down seems to indicate that she did not engage in a detailed means/end analysis about the connection between her lecture behavior and her students' learning. Once again, there may have been little reason to invest energy in reflecting upon a situation that did not seem to have much consequence on student test behavior.

The action response she decided upon indicates further that Stacey viewed the issue as a technical one. She would repeat information and give students time to take notes. Apparently, she hypothesized that the reason students complained about her speaking speed was because they were unable to write down everything she said in the time she allotted. Although she may have considered other hypotheses relative to the ability of students to learn by taking notes, there is no indication of that, and the seminar group did not assist her in teasing out other considerations. As a result, no one challenged her technical framing of the problem; no one questioned her solution. Stacey continued, then, to treat speech rate as a surface dysfunction reparable through repetition.

Her inability to reframe the problem in other ways may have been influenced by prescriptive assumptions about what should be occurring in a classroom and what successful teaching looked like (Brookfield, 1995). The "observable facts" were that students were doing well academically. They were focused on her in class and generally liked her. It is not uncommon for new teachers, who have little previous experience, to attend to such issues of management (Boud & Walker, 1998; Calderhead, 1989; Chi, Glaser & Farr, 1988; Ferry & Ross-Gordon, 1998; LaBoskey, 1995). Because they do not conceptualize the complexity of factors that contribute to an issue, they often apply rule-driven solutions to "surface elements of the problem" (Ferry & Ross-Gordon, 1998).

Was there evidence in the classroom situation that other factors may have contributed to students' discomfort with Stacey's speaking rate? If so, why did she not attend to them?

Class observations of Stacey's lectures indicate that she had either memorized, or recalled almost exactly, the words in her class notes and Power Point slides. These had been composed outside of the classroom context as a part of module construction, and had been approved by seminar faculty. When Stacey lectured, her vocal cadence, influenced by consistent repetition of phrases and sentences, implied that she had rehearsed a well-bounded set of assertions. New to the information, students may have regarded Stacey as the authoritative transmitter and defined their role as note takers. Students may have expected this behavior from their college teacher, rather than the "conversation" about information that is the hallmark of a learner-centered classroom (Barr &

Tagg, 1995). Because she presented several minutes of information before pausing, students may have had too little time to process what they had recorded to formulate queries—despite Stacey's frequent repetition. As a result, they rarely asked her to explain. This, in turn, provided Stacey with no feedback with which to assess student comprehension. Perhaps as a result, she was never positioned to engage in the kind of reflection that would have allowed these hypotheses to surface.

A second area of student criticism was Stacey's ability to answer their questions. By her own admission, when she wanted to "cover material," she controlled student interaction by not asking questions. She was uncomfortable when some students raised their hands because they had a knack of asking her things she did not know. Knowing what to expect seemed important to her. She even wrote out the wording of questions she would ask students, and included the answers she expected.

In Stacey's class, then, unscripted questions from students usually occurred when her lecture was "breached" by unanticipated queries. When students asked questions or gave responses that she did not anticipate, her behavior often differed from the fast-paced, smooth delivery of her lecture. For example, when she was unable to answer a student's question about left- and right-handedness, she hesitated and stumbled over her words, calling it a "messy area," a "complicated" issue that she would get back to him about. When a student asked a question about behavior, she answered haltingly, saying that she realized "it's a little bit confusing." This occurred again when students asked

questions about memory, and she asked them to wait for a few moments, or another class, where the question would be answered.

As a student of psychology, Stacey knew, at an intellectual level, that her students' learning processes were neither linear nor neat, yet she seemed desirous of controlling the "messy" behavior that occurs when learners process information and try to make meaning. She had been a student far longer than she had been a teacher, however, and, as a novice, the "powerful effect of the student's . . . heritage as a learner" (Zeichner & Grant, 1981), her need to control and survive (McIntyre, 1993; Sprague & Nyquist, 1991), and her assumptions, values, and emotions about her teaching role (Johnson, 1988; LaBoskey, 1995; Tann, 1995), may have significantly affected the way she built her teaching situation and the problems that would arise there.

It appears, then, that she attempted to avoid situations where students grappled messily with the lecture material. However, her college teaching courses and her seminar experiences advocated active learning situations, where that very thing was likely to occur. There is indication that she recognized this contraction, as she apologized for her over reliance on Power Point slides and lectures, and, at the end of the semester, said she had "learned" that students believe their learning is enhanced by active learning situations—and would continue to keep that realization in mind in future teaching. Nevertheless, she never identified this as a tension or struggle, or framed it as a problem of such consequence that she needed to revisit her classroom behavior during the course of the semester.

That is not to say that she did not ever provide active learning experiences. When she engaged students in the "moral dilemma" discussion, for example, she abandoned lecture notes and used student opinions as the "text" that guided discussion. Students who moments before had been silent and writing suddenly engaged openly, exploring tentative conclusions and competing ideas. Stacey described their behavior as "impressive," not only because they had actively engaged with the problem, but because they exhibited a level of thinking that surprised her.

Schon (1983) described surprise as one of the most predominant reactions that prompt practitioners to engage in "reflection-in-action," as they assess the elements of the situation that may have contributed to it. On her own, it does not appear that Stacey went beyond feeling pleased about the event; the seminar did not engage in a discovery dialogue about why Stacey's students behaved the way they did. She did not contrast this behavior with the way her students acted when they took notes, a likely conduit that may have led to questions about what kind of learning was going on in both situations.

As she had exhibited in the fall semester, Stacey may have constructed her class lecture in the way that she did because of unexamined beliefs and emotions about her role as a teacher. Simultaneously, the classroom she constructed may have inhibited her ability to be "open-minded" about the situation, to examine the beliefs and emotions from which it was built (Dewey, 1933).

Service Learning. Stacey had explained, the semester before, how her service learning component was a justified action because it realized a belief she had about the importance of applying psychological concepts to students' lives. It was not until two weeks before the spring semester ended, however, that she mentioned the project to the seminar, and she did so by describing a significant problem: almost half the class had not done the site work. If they did not complete the project, she said, she would have to fail almost half the class, an unacceptable action.

Marcus began to view the problem by hypothesizing that her students were unused to an educational environment that gave them the responsibility for their own learning. Although Dr. Marcello agreed, the discussion about that probable cause went no further. Instead, Stacey indicated, both in seminar and in the subsequent "Fish Bowl" meeting, a number of assumptions: students were incapable of doing this kind of work without strict and enforced guidelines from the instructor; students did not understand the concept of empowerment; students were not inclined to engage in an activity that required so much work; students did not have the necessary "attitude" to successfully embrace the opportunity. By settling on, and leaving unexamined, these assumptions, Stacey located the problem outside of herself, outside of the assumptions she had used to justify the project months before. This must have seemed like a time where the "Why?" questions were eclipsed by the "What works?" questions.

We have little evidence that Stacey consistently engaged in reflection beyond the technical. At the point she feared many students would not complete

the project, even if she was inclined to do so, she may have seen little value in examining her assumptions about experiential learning. She had a problem that could not be addressed. However, after students completed the project and gave her feedback about their experience, she was pleased that her initial hopes had, in part, been fulfilled.

CHAPTER IX

CONCLUSIONS, IMPLICATIONS AND DISCUSSION

The research questions guiding this study encompass a wide range of factors contributing to reflection about teaching, but can generally be categorized as focusing on problem identification, process of analysis, and conclusions that influence subsequent action:

- What is reflected upon? When, why, how, and by whom? (Identifying Initial Problems)
- What cognitive processes are used to define and analyze points of reflection? When, why, how, and by whom? (Processes)
- What conclusions or solutions are reached by participants as a result of these processes? (Conclusions and Solutions)

Operating within all three levels of the reflective process described above is a complex interplay of influences: What attitudes, beliefs, assumptions and emotions are factors in the reflective behavior of participants?

Isolating different components of the reflective process is not meant to imply that they operate autonomously, which is not representative of the recursive nature of reflection. However, investigating the reflective process through the lens of its distinctive features is useful in interpreting how participants negotiated the meaning of reflection as they operated in their environment. Subsequently, a number of conclusions can be posited by comparing the

reflective behaviors of participants, conclusions that both enlighten and invite further research.

Identifying Initial Problems

Conceptualizing "problems" in the broadest sense, Dewey (1910/1997) marked the beginning of reflective thinking as the recognition of a perplexity demanding attention, something that needed "to be accounted for, identified, or placed" (p. 9). Problems might generate an indeterminate uneasiness, or so startle the thinker that s/he begins immediately to speculate upon solutions. In both cases, "the difficulty resides in the conflict between conditions at hand and a desired and intended result" (p. 72). Scrutiny to identify the nature of this conflict, believed Schon (1983), was essential to reflection. That is, the nature of the reflective process is determined by the way learners define, or frame, the circumstance that first causes surprise or unease.

It is not possible to capture the moment when a practitioner first frames a problem, as it occurs simultaneously with the apprehension of surprise. For this study, the closest observable point to the initial recognition of problems was the first public reporting of them by participants, recognizing that a largely unconscious process of meaning making occurs when language is used to describe experience. Nevertheless, this "first framing" may reveal significant insights into the process of reflective thought.

In this study, problems initially identified by participants emerged from three concentric but interrelated areas of tension between their teaching experiences and desired results. The first arose from the beliefs, attitudes and

assumptions about teaching and learning that participants brought to their new classroom situation (Initial Anticipated Problems). Second, participants identified problems in reaction to the classroom situation (Initial Problems Prompted By Practice). Finally, the expectations of the larger environment, the milieu of the seminar, the conversation about teaching and learning within which the participants operated, contributed to what they identified as teaching problems (Initial Problems Prompted By Milieu).

Initial Anticipated Problems

All four participants entered their teaching year with strongly held values, beliefs and assumptions about teaching. These factors informed the way they identified problematical issues once they began teaching. However, in some cases, participants seemed to formulate problems *prior to* entering the classroom.

The most obvious example was Marcus's anticipation of the problem he would have creating an active learning environment within the structure of a college classroom. He framed the problem as a causal one--the classroom environment would constrain learning, a framing based upon conclusions he had drawn from previous teaching experiences. These assumptions seemed to entail a belief that certain conditions must be in place for active learning to occur, and his assumption that the college classroom did not evidence those conditions. As a result, Marcus exhibited significant concern about a problem which he believed he could anticipate, but not fully understand or address *a prioi.*

Julia, as well, entered the fall semester believing strongly in the need to create a collaborative classroom environment in which both she and the students were learners. She identified a problem that she had framed as a student—the disparity between teachers' and students' roles in the making of meaning. Although she did not elaborate, it seems likely she saw this imbalance as detrimental to student learning, and so designed her course, and planned her teaching behaviors, with this in mind. Like Marcus, she recognized a tension between her beliefs and the college classroom situation, and anticipated that the problem would be manifested in her future teaching.

Christian also held strong beliefs prior to his teaching, that, although quite differently, caused him to anticipate a problem. In preparation for his fall teaching, he reported potential problems in his lectures that he had been able, for the most part, to "solve" before teaching began. As a result, he anticipated no significant problems about his lectures.

The important difference among these approaches was not that participants' strongly held beliefs informed formation of anticipated problems, but in the way those beliefs were held. Passionate about active learning and collaborative classrooms, Marcus and Julia, nevertheless, appeared to believe that these were choices made from a multitude of available teaching behaviors. The impetus for problem identification seemed to stem from their recognition that they were about to enter a situation of discovery. This level of practical reflection, contended Van Manen (1977), is aimed at understanding rather than knowing. Both described themselves as partnering with their students in a learning

journey. By recognizing the conditional value of their beliefs, Marcus and Julia oriented themselves as learners. Their goal was to understand.

In contrast, Christian framed his problem of lecture construction as a matter of applying "ideal types" of format to a clearly defined end. This technical orientation towards knowing classifies his as reflection concerned with ends rather than means (Van Manen, 1977). He needed only to identify and utilize ideal lecture elements to solve his problem. Since he had not yet taught, these ideal types were probably constructed from lecture components he had experienced as a student. Because he had solved it before the praxis, he entered teaching believing that the problem would not manifest itself in the classroom.

Several tentative conclusions might be drawn. The way that anticipated problems are described seems dependent upon whether the problem identification is informed by a quest to understand or a quest to know. In the former, the definition of the problem is tentative, as it can only be apprehended in the dialogic experience between the practitioner and his/her teaching situation sometime in the future. For a new teacher yet to enter the classroom, anticipating such a problem might be especially unnerving, as evidenced by Marcus's high level of unease about what he was to face. As well, defining a problem in this way involves a deliberative stance, an analysis of "individual and cultural experiences, meanings, perceptions, assumptions, prejudgments, and presuppositions" that may be beyond the skills of new teachers—except,

perhaps, in the case of someone like Julia, who described herself as "over analytic" (Van Manen, 1977, p. 226).

On the other hand, if the anticipated problem is constructed from the stance of the knower, it may generate much less anxiety and be overlooked once teaching begins. For new teachers, classifying problems in this way may be preferable, as it assumes a definite answer can be located and applied, regardless of the teaching situation. Christian's language about his ability to solve the problem seems to indicate an orientation to the past, rather than the future. Presentations were, simply, "no problem."

Implications for Further Inquiry. The problems that practitioners anticipate are always influenced by beliefs and assumptions built from previous experiences. Further investigation of new practitioners' perceptions of themselves as teachers, and as students, might help clarify the nature of anticipated problems. As well, a number of related questions deserve further inquiry: In what ways do different perceptions of self as knower and learner influence the construction of anticipated problems? To what degree does a belief that anticipated problems can be adapted to, but not solved, affect new teacher anxiety? If teachers define problems as solvable, are they less likely to attend to factors in the teaching experience that challenge that conclusion? In what ways do anticipated problems influence their reflective behavior once teaching begins?

Initial Problems Prompted By Practice

Problems most often emerged from practitioners' actual interaction with the teaching situation. That is to say, a myriad of factors relating to the relationship

between the participant and the larger milieu within which s/he operated determined which events in the classroom setting were perceived as problematical. The frequency of initial problem identification, where and when problems were reported, who raised them, and the subject and nature of those problems reveal certain patterns of behavior useful in understanding this aspect of teachers' reflective process.

While all participants described problems throughout the year, significant differences occurred in the frequency with which each initially identified issues he or she constructed from practice. Stacey and Julia were least likely to initiate reporting about problems in journals or seminar (without prompting), while Marcus, who rarely used the word "problem," often reported concerns in seminar. Christian expressed initial surprise and concern more often than any other participant. Most of the time, he initially reported problems in his journal, and, subsequently, reframed them when he reported them in seminar.

The teaching journal was a locus for participants to describe and reflect upon teaching experience, so initial identification of problems was likely to occur there. Those reported in the journal most often represented an early, and important, phase of the reflective process, as the journal required participants to use language to make meaning of their experience. This often tentative framing may have facilitated subsequent, and more elaborate, public reframing in the seminar.

However, there were some cases where participants' first public framing occurred in the seminar. By opening meetings with invitations to share "teaching

dilemmas," Drs. Simpson and Marcello conveyed that problems were suitable, even expected, material for discussion. The journal and the "teaching dilemma" protocol of the seminar, however, while they invited the reporting of initial problems, did not prescribe the nature of those problems. For most participants, problems initially identified in journals were subsequently reported in seminar discussions.

The initial problems stemming from classroom experience that were reported by participants related to student response; participation in class activities (including discussions, demonstrations, group work, note taking); student feedback on assessments, tests, quizzes, course evaluations and assignments; class behaviors, including overheard remarks, deportment, facial and body language; interaction with teacher through email, office visits, conversations before and after class; and attendance (absences, late or missed assignments). Although infrequently, participants identified problems they noticed about their own behavior, whether or not they consciously tied them to cues they received from students.

In this study, the way problems of practice were initially framed varied significantly among the participants. With strong student evaluations and cooperative students, Stacey identified very few problems in practice. Although she wrestled throughout the year with the tension between her preference for lecture and the program's value on active learning, her initial problem reporting was a short description that students were "very quiet," and subsequent reporting never occurred in seminar unless prompted by the discussion. This leads to

speculation as to the degree to which she problematized the situation. Although it was to become significant as the spring semester progressed, Stacey's initial reporting of the problem with student participation in the service learning project was a simple comparison of ways students reacted to the assignment. It is difficult to know whether she did not perceive a problem or wanted to wait until she had more evidence before describing one.

Two factors may have influenced that fact that Marcus never defined problems directly related to the tension between active learning and the college classroom structure once teaching began. First, he had entered teaching anticipating the tension, framing it as a situational reality that he would adapt to rather than solve. Second, like Stacey, he continually received positive feedback from students about his ability to create an active learning environment. However, while Stacey reported surprise only after significant evidence that students were not doing the service learning assignment, Marcus regularly reacted to unanticipated threats to his ability to maintain the relationship necessary to the active learning environment. These problems he framed as issues of respect and trust. The anticipated tension with which he entered the classroom seemed to manifest itself in new ways once he began teaching.

Similarly, although for different reasons, an aspect of Christian's initial problem identification about his lecture was reported once teaching began. Initially (and repeatedly) framed as a problem with measurement—something he could easily address—the disjuncture between amount of class time and course material was reported as problematical in much of his fall journal. The longer he

engaged in the classroom situation, however, the more frequently he identified problems related to student reaction to his teaching: lack of participation, refusal to read the text and syllabus, confusion about his lecture, and poor performance on quizzes. Most often, these problems were framed as issues of deficient student behavior, confusion, obstinacy, and disinterest in learning. After still more time, he described relationship problems between himself and students. These were framed in terms of student disrespect.

Julia's focus on problems related to student engagement corresponded to her initial anticipation of the difficulties of creating a collaborative environment in the college classroom. However, the way she first reported problems (usually in her journal) was distinctly different from most of her cohorts. After a brief description of the problem (low quiz scores, lack of participation), she regularly indicated that her framing was necessarily tentative, as she needed to "think about" it further, or do more investigation by observing subsequent classes. Reporting relatively few problems may have occurred because, like Marcus, she framed issues as situations she would adapt to rather than solve. As well, like Stacey and Marcus, she received significant positive feedback from students about her ability to create a collaborative environment. Unlike Marcus, however, she reacted only infrequently with surprise to incidents in her classroom.

Implications for Further Inquiry. A largely unexamined area in the scholarship of reflective thought is problem apprehension and initial framing as it emerges from classroom experience. It seems important to the inquiry of the reflective process that we have better understandings of the relationship between

teachers' assumptions and the experiences in the teaching situation that compel initial surprise or confusion. What experiences are framed as problems; which are not? What influences the distinction? As well, we need to understand more fully the factors that inform the relationships between initial and subsequent framing. For example, what is the effect of student evaluations on the propensity of teachers to frame and reframe problems?

Among those factors may be the means provided to teachers for public problem framing. Teaching journals and seminar discussions are hallmarks of programs designed to promote and develop teachers' reflective thought. However, there has been little focused investigation of the role they play in the initial reporting of problems of practice. What elements of each influence the likelihood, and type, of initial problem framing by teachers? What reflective processes occur when problems reported in journals are subsequently reported in seminar meetings? More broadly, how does language affect both the apprehension and the reporting of problems that may influence subsequent reflective processing?

Initial Problems Prompted by Milieu

Because new teachers have so little experience in the classroom situation, they may be blind to the many cues that, after more experience, call for attention. While teaching journals and seminar protocols may invite problem reporting, on their own they do not provide practitioners with the means to understand what count as legitimate problems. In this study, the required readings of the seminar and assumptions about teaching gained from other venues, as well as the

behaviors of supervising faculty, acted as prompts for initial problem reporting. Because these experiences represent a dialogic relationship among a variety of elements, caution must be applied in isolating them. However, this isolation assists in initial understanding of the impact of certain factors on the reflective process.

Influence of Readings and Coursework. Within the seminar, initial reporting of problems was generated, especially in the fall semester, through participant reactions to required readings. In the first few weeks of the fall, participants had very little classroom experience from which to locate problems, and, perhaps, were not especially open to perceiving them.

Required readings affected initial reporting of problems in several ways. On the most basic level, they gave participants a body of beliefs about teaching and learning that could be used as one element of the tension set within which problems were located. By contrasting them with their own assumptions, and/or their real or hypothetical experiences as teachers and students, participants seemed to effortlessly describe a number of problems. Regardless of the extent of their experience, then, they could engage in problem identification and so begin reflective process.

An example of this occurred when the seminar discussed the use of discussion groups. Stacey and Julia agreed with the assumption of the reading that discussion moved the focus from the teacher to the learner (something they both recognized as a value from other courses), thereby framing this tension as a problem. Marcus recognized in the readings a goal he listed on his syllabus, the

development of critical thinking--once again implying a set of problems. The readings seemed to validate his inclination to frame problems as complex because they articulated the sometimes uncertain, but always effortful, process of designing discussion activities. Christian's assumptions were validated as well, as readings admitted that time was a challenge in the use of class discussion. By raising the question of efficacy, the readings may also have given Christian "permission" to report his worry that valuing discussion had significant implications for his course structure. This problem was complicated, however, by his recognition that classes on college teaching had valued discussion.

When the seminar discussed the use of active learning, participants were able to identify potential problems that might impact their teaching. Christian and Stacey problematized the use of active learning by implying that teachers should not employ unexamined, but popular, teaching methods. Because they now had a few weeks of experience in their classroom, participants were more able to frame as problems tensions between their teaching situations and the assumptions laid out about active learning. Julia reported a potential problem between the diverse nature of her class and the use of discussion. Marcus described the limitations of a recent class activity based upon what he took from the readings.

In some ways, problems initially reported in reaction to required readings indicated that participants were already engaging in problem formation and analysis about potential issues that might arise in their classrooms. For example, in the discussion about exam construction, Christian reported a hypothetical

problem students might have with his test language, the very problem he encountered months later. In a conversation about using class discussion, Marcus raised a potential problem of alienating less talkative students, an issue central to his desire to build a respectful class environment.

On some occasions, it appeared as though the problems participants wrestled with resulted from a comparison between their teaching actions and prescriptive assumptions in the readings, of supervising faculty, and of the larger milieu. For example, both Christian and Julia spoke often about the need to incorporate active learning opportunities beyond what they felt they could.

Faculty Influence. At least as significant an impetus for the initial reporting of problems by participants were the behaviors of Drs. Simpson and Marcello as they guided seminar discussion and supervised teaching.

Because they facilitated reflection beyond the simple reporting of problems, it is somewhat artificial to draw the bounds between initial problem framing and the analysis inherent in reframing. However, the protocol of problem identification employed by Dr. Simpson seemed to prompt participants to recognize certain types of problems, and in ways that they may have been unready to do without her assistance. By repeatedly asking participants to consider "pros and cons," advantages and disadvantages, Dr. Simpson modeled an approach of problem identification that was especially conducive to subsequent analysis.

While there are many examples of this in the data, Dr. Simpson's behaviors in the seminar about the use of class discussion is representative. She

began by reminding participants to assess the value of any teaching activity according to their course goals, thus establishing a "universal" frame for identifying problems. Then she asked participants to compare their experiences as teachers or students to ideas described in the readings, thus establishing a "situational" frame. This double framing allowed participants to enter the reflective process from different points. If they had readily available examples of teaching or student experiences, they could use the "situational" frame to help them identify problems in practice. They could further problematize the experience by "re-seeing" the issue from the frame of compliance with teaching goals. On the other hand, if they had no relevant classroom experiences, they could still hypothesize problems by employing the "universal" frame. The heuristic devices modeled by Dr. Simpson allowed participants to identify problems they could then analyze further.

Perhaps because participants had several months of teaching experience, and because seminar readings related less directly to pedagogy, Dr. Marcello did not regularly utilize this protocol to elicit initial problem reports. Rather than generate problems to discuss, he more often engaged participants in analysis of problems brought by members.

Faculty also identified initial problems in participant teaching when they observed classes and videotapes or responded to participant queries. Dr. Marcello, for example, indicated a problem with a demonstration that Marcus gave in a videotaped lecture, and pointed out inaccuracies in some of Stacey's class content. After Christian informed Dr. Marcello of low quiz grades in the

spring, the faculty member initiated a new problem definition: Christian's questions were too difficult.

In this study, the interactions between participants and the milieu in which they were operating, including their knowledge of pedagogical theory and their interactions with supervising faculty, prompted many initially reported problems. The nature of these problems seemed to be influenced by a number of factors, including participants' teaching experience. Course readings generated discussion and helped initiate problem identification. Sometimes, these readings were regarded by participants as prescriptive assumptions they were expected to apply in order to define problems. Faculty behaviors in seminar modeled ways to think about teaching situations in order to formulate problems; however, these, too, were sometimes regarded as prescriptive messages by participants.

Implications for Further Inquiry. The milieu in which participants operated positioned them to generate potential problems or to "re-see" classroom experiences in order to discover problems. Investigation of the role that supporting structures like the seminar play in the ability of teachers to discover problems is especially important to faculty development programs, and a number of considerations warrant new inquiry.

As described above, the practicum structure allowed for the generation of hypothetical problems which could then be analyzed. What are the implications of applying hypothetical problems to reflective analysis? What significant differences between the apprehension of hypothetical problems and ones discovered in practice influence the way problems are first framed and

subsequently analyzed? Are there reasons for modeling problem identification using hypothetical cases that are especially suitable to the characteristics of novice teachers?

A number of questions arise regarding the effect of prescriptive pedagogical assumptions on teachers' ability to frame initial problems. In what ways do these assumptions influence the kind of problems they identify for reflection? How might the relationship between teachers' personal beliefs and assumptions affect the way they use prescriptive assumptions to frame problems? What considerations are made in the selection of materials used as discussion prompts?

The influence of supervising faculty opens many doors for inquiry. What training, if any, should faculty have in protocols to guide teachers in the generation of problems for reflection? What influences do heuristic devices have on the ability of teachers to generate problems? What are the ethical considerations in the use of strategies designed to assist teachers in discovering problems? What is the influence of faculty members' assumptions and beliefs on the way they guide teachers in the problem framing process?

Processes

While reflection actually begins the moment practitioners apprehend surprise, evidence of the process generally becomes available only after problems have been identified publicly. Although the data indicate a number of public reflective behaviors exhibited by participants, there are indications that reflection occurred in less public ways.

In this study, reflection occurred in a number of interacting locations. Most public was the conversation of the seminar, where interchanges among participants and faculty made apparent the complex relationships among components of the reflective process. The teaching journal and portfolio served as an intermediary space between full public disclosure and private analysis, a kind of "semi-private" location that, nevertheless, provided evidence of reflective thought.

Public Dialogic Reflection

When learners participate in situations of public framing, as in the seminar, the learner's "teaching dilemma" becomes the subject in a dialogue, "a web of moves, discovered consequences, implications, appreciations, and further moves" (Van Manen, 1977, p.131). The following representative examples of seminar dialogues are designed to make comparisons, synthesize evidence to draw conclusions, and simultaneously reveal the complexity of the reflective analysis demonstrated by participants.

"Using Discussion Groups." This seminar dialogue about the use of class discussion occurred early in the fall semester, so participants, while they came to the seminar with understandings about discussion from required readings, had little chance to actually use the method.

As reported above, Dr. Simpson began by asserting that teaching methods were choices, and that effective teaching required analysis of those choices against course goals. The silence that followed when she asked the group to compare their experiences with ideas from the reading may have occurred

because participants had too little experience. Marcus, who had used discussion, offered a response indicating that beliefs about teaching behavior were held conditionally and that he was open to reflecting upon the suitability of discussion in particular circumstances.

Dr. Simpson validated Marcus's stance when she asked participants to stipulate the conditions under which discussion might be an appropriate teaching behavior. In this way, she modeled the reflective analysis tied to observation of specific situations, once again asserting the conditional stance of teacher knowledge. Such modeling might have reinforced the reflective processing of participants, or provided them with experiences to learn ways of engaging in that process.

Julia's and Marcus's responses echoed Dr. Simpson's "universal" frame by justifying discussion with course goals. These responses indicated their ability to analyze action against beliefs and assumptions, behaviors they regularly engaged in. In contrast, Stacey's description of general goals of discussion, with no justificatory analysis, indicated a different capacity to analyze the issue. This may have occurred because the response she gave--that discussion moves the focus away from the teacher—directly contradicted her lecture-heavy behavior in the classroom. The incident in the seminar, then, may have served as an initial way for her to frame a problem—perhaps one she had not yet recognized--in a way that did not directly threaten her. Dr. Simpson's subsequent analysis of problems with lecture may have provided Stacey with some alternative ways to consider the issue, and so have encouraged future reflection.

Dr. Simpson continued to model reflective analysis by asking participants to brainstorm the disadvantages of discussion. Christian's immediate response, that discussion used too much time, indicated the potency of his concern about efficiency. He offered no explanation or justification for his remark, and expressed it emphatically, as though it was impervious to analysis—a position he often took with issues he could not readily solve. That no one in the group responded to this concern may have reflected participants' inability to justify the use of discussion in the face of a technical challenge they were all facing—too little time to cover material. Dr. Simpson's lack of rebuttal or challenge to justify assertions may have revealed her disinclination to be dismissive of hypotheses that participants offered.

Instead, she acknowledged Stacey's remark that the readings had taught her about the need to purposefully design discussions, and Marcus's that discussion construction required effort. While these responses were a reaction to Dr. Simpson's original question about the challenges of using discussion, they also tacitly acknowledged Christian's concern, but framed it in ways that opened the issue to further analysis—something that occurred regularly in seminar discussion. In subsequent remarks, Dr. Simpson indicated that Christian's, Stacey's and Marcus's responses were evidence that challenges to teaching behaviors were often dependent upon the ways teachers defined their roles. She acknowledged the conditional nature of teacher decisions in the indeterminacy of the classroom, thereby validating an exploratory thinking process in determining appropriate teaching behavior. Beginning from Christian's initial remark, the

exchange moved from a first problem to several problem re-framings, and concluded with the master teacher's approval of the thinking process.

As the discussion continued, a number of problems were framed, and subsequently reframed, by the group. Marcus hypothesized about the influence of student developmental level on the efficacy of discussion. He followed this, as was his way, with a tentative solution, which he subsequently analyzed. By matching a hypothetical problem with a hypothetical solution, he investigated the assumptions that led him to the initial problem framing, an iterative process he frequently used to analyze teaching issues. Simultaneously examining different assumptions in order to better understand the relationships among them represents the "double movement" from tentative data to comprehensive meaning of the situation that Dewey (1910/1997) regarded as essential to the reflective process.

In contrast, Christian regularly sought clearly defined solutions without weighing the significance of the relationships among factors in the structure of problems—so he was more apt to adopt a definite opinion. He assumed, for example, that some topics in psychology just did not lend themselves to discussion. Although Marcus countered by describing a hypothetical example, Christian seemed to not consider it. Teachers operating at technical levels of reflection may be blind to suggestions that demand a paradigm shift. Instead, Christian responded as someone who approached problems from the orientation of a knower. Unable to reframe his initial problem that the use of discussion conflicted with the integrity of his presentations, he essentially closed the

analysis process by resigning himself to the un-purposeful and occasional use of discussion when he could fit it in.

Once again, the dialogue of the group offered sympathetic reframing of closed problems, as Julia, and then Dr. Simpson, offered alternative ways to view Christian's problem, and so reopened analysis. Dr. Simpson described a variety of hypothetical ways to use discussion. She seemed to acknowledge that Christian understood the theoretical need to offer different learning activities, and interpreted his problem as an inability to envision what discussion might look like in his class situation. That is, she constructed multiple layers of problem frames which included, not only discussion, but Christian's inability to envision its use.

"Using Active Learning." A few weeks into the fall semester, the seminar group discussed several readings about the use of active learning techniques in the college classroom. Characteristically, Dr. Simpson invited participants to share their reactions to the readings. In this way, she encouraged them to regard knowledge about teaching as suggestive.

Subsequently, she asked Stacey to explain a concern that she had shared with her. Her students, Stacey said, preferred lecture and resisted her attempts to deviate from that method, and she framed the issue as a closed-ended problem related to their learning preferences. Considering that, at some level, Stacey was wrestling with her inability to adopt a more learner-centered approach in her classroom, she may have represented her own desire as that of her students. By asking Stacey to bring her concern to the public forum, Dr. Simpson may have, without confronting her directly, intended for Stacey to be

exposed to ideas about active learning that might help her address her own problem.

Christian justified his opinion that active learning shared many of the characteristics of a "fad" by a relativistic argument that teaching methods moved in and out of favor, concluding that active learning was not a "miracle solution." Considering that Christian was having difficulty retrofitting active learning techniques into tightly organized class presentations, he may have been justifying his own behavior. Dr. Simpson and the group did not respond, so the assumption remained, for the time being, unchallenged. However, later in the seminar, without expressing agreement with Christian's argument, Dr. Simpson validated his belief that active learning was not a panacea. In this way, the seminar allowed for subtle distinctions in points of view to be considered without jeopardizing the feeling that participants could safely air tentative ideas.

By asking participants to speculate how they could design effective active learning, Dr. Simpson both opened the door to reflection and indicated that active learning was a consideration they should examine. This may have been a way to challenge Christian's thinking without directly confronting his assumption about active learning being a "fad." Given her reliance on lecture, Stacey had little experience using active learning, but she described a demonstration that had not gone over well and analyzed what went wrong. Perhaps to indicate that even master teachers were learners, Dr. Simpson described an activity of her own that had been less than successful.

Later in the discussion, Dr. Simpson used Stacey's earlier experience as a lesson about the importance of participants to constantly assess practice in terms of learning goals, and reframed Stacey's problem as a pragmatic rather than theoretical one: Students might have preferred lecture, she said, not only because of learning preferences, but because they realized that tests were based on lectures. Considering that this was exactly the case in Stacey's class, Dr. Simpson may have been providing new information with which she might reconsider her behavior—all the while couching it as a lesson for the entire group. Dr. Simpson described master teachers' opinions about the relative worth of "covering material," thereby providing the group with data that they could not gain without more experience. In this way, she enriched the analysis of problems they were having about presenting material.

As the discussion continued, Julia problematized the use of study groups in a classroom of diverse students. Marcus, not responding directly to her concern, described how he had addressed a similar problem. Typical of his thinking, he qualified his solutions with subsequent problems that he needed to consider. This opened the door to group sharing of hypothetical and real examples of active learning techniques, allowing many opportunities for participants to question one another. For example, Christian raised a concern that an activity described by Marcus would disadvantage some students. Marcus responded by offering a different perspective. When Marcus described a successful activity, Christian hypothesized potential problems, and Marcus responded by analyzing his considerations. The dialogic nature of this public

reflection provided participants the opportunity to safely consider different analytic approaches and framing preferences.

"Borderline Problem Child." Marcus was the first to respond to Dr. Marcello's invitation to share problems a few weeks into the spring seminar, and described a student whose classroom behavior disturbed him but was short of overt disrespect. This was a likely problem for Marcus, as he was concerned about the balance between respect and control in his classroom.

Immediately, Dr. Marcello asked him to describe the behaviors that troubled him, and then asked if the student contributed positively to the class. In this way, Dr. Marcello modeled a reflective behavior aimed at re-evaluation of the initial problem framing. His conclusion was that the problem Marcus needed to evaluate was the relative weight of the student's positive and negative characteristics. He helped Marcus conceptualize the problem by describing dichotomous situations and offering models of responses Marcus might make.

One of the models corresponded with a behavior Marcus had already tried. Dr. Marcello validated his choice, but asked him to explain how he might further interact with the student. In this way, he helped Marcus understand the need to address the problem beyond his initial attempts. Considering that Marcus was disinclined to confront discipline problems, and expressed confusion over the boundaries he should maintain with students, Dr. Marcello's advice encouraged him to think about the problem further.

Perhaps as an attempt to relinquish this responsibility and reframe the problem as the student's deficiency, Marcus explained that his syllabus clearly

described the kind of respect he expected. Dr. Marcello's response seemed to dismiss this framing, as he continued to advise that Marcus take action. Without telling him what to say, he suggested a way to structure his comments that might quell the student's negative reaction and Marcus's discomfort at confronting him.

Julia helped Marcus reframe the problem further by suggesting that Marcus describe to the student the kind of behavior he preferred. In this way, she implied that the issue may have stemmed from the student's misunderstanding of social norms, rather than obstinacy or disrespect.

Implications For Research. As evidenced from the examples above, participants exhibited a wide range of reflective behaviors. Marcus's reflective process was highly investigatory, and often revealed complex relationships among problems, causes, and solutions. On the other hand, Christian, who framed problems technically, exhibited a need to locate simple solutions in an environment that did not readily offer them. Stacey was able to frame problems theoretically, but was not as able to reflect upon her own teaching behaviors. Although Julia did not engage in seminar dialogue regularly, she demonstrated an ability, like Marcus, to understand teaching problems from a number of practical and theoretical levels.

Their behaviors in the seminar dialogue expose a number of issues deserving of further investigation, including the nature and effort of various reframing types on the reflection process, the influence of various types of reflective thinking on the dialogue and on the subsequent reflective abilities of participants, and the ability of participants to understand and engage with

reflective thinking different from their own. The dialogue seems to allow for problems to move from individual to group ownership, but further investigation might clarify what specific behaviors influence that shift to shared responsibility.

The educative value of the seminar dialogue raises questions about how the structural elements of dialogue influence the reflective behavior of teachers, especially as they affect the abilities of teachers to transfer from public to private domains. What specific behaviors among seminar members encourage productive analysis of problems and solutions? How do the assumptions, values and beliefs of dialogue participants influence the dialogue? What roles do supervisors play in modeling, facilitating, managing and guiding reflective behaviors? What ethical considerations should be examined in the use of public dialogue for reflection?

A key element in this last question is the creation of a safe environment in which teachers can openly explore problems and responses. What roles do supervising faculty play in the maintenance of such an environment; what effect does group scrutiny have on the willingness of individuals to share hypotheses, especially when those hypotheses might be regarded as contrary to the apparent values of the larger milieu within which teachers operate?

"Semi-Private" Reflection

The teaching journal and the teaching portfolio served different, but related, purposes. By frequently recording observations about their teaching in their journals, participants had the opportunity to construct meaning from experience and to collect data for subsequent reflection. Initial journal reflections

often informed subsequent problem framings in seminar. The teaching portfolio, on the other hand, required description and justification of teaching behavior, inviting participants to reflect in more structured ways. Regular conversations about teaching journals did not seem to occur throughout the year, and portfolios were submitted at the close of the spring semester, so they represented less than fully public reflective vehicles. Nevertheless, several conclusions can be drawn about their role in the reflective process.

Journal entries sometimes acted as incubators for ideas later reframed or reported in a more public way. Brief descriptions of experiences and quick assessments of their success were given, but participants almost never reflected in depth. Christian reported increasing success in his journal at fitting course material into class time, a problem he did not report in seminar. At the same time, he began to express in seminar his unease about a new, but related problem. Now that he had finally figured out how to size his presentations into class time, how could he possibly include active learning techniques? By providing evidence of his success at solving one technical problem, the journal may have disinclined him to frame a new, and much more complex, one. Similarly, Marcus described success with active learning in his journal, but did not analyze to any great extent. However, in the seminar he framed related problems about student respect and trust. Stacey reported on evidence of low student participation in her journal, but used the seminar to frame the related problem that students preferred lecture over more active learning experiences. As well, the initial problem of a disruptive student described in her journal was eventually re-

conceptualized in seminar as a problem with controlling class content. Initially reporting on, but not analyzing, poor quiz scores in his journal, Christian eventually contacted Dr. Marcello and subsequently revised his quiz material.

Because they were not open to public scrutiny, journals allowed participants to explore without coming to conclusions and to express emotions that they almost never did in seminar. Julia asked, but did not answer, a series of questions about possible factors contributing to low student quiz scores. Stacey and Christian regularly noted differences in student behavior when they deviated from lecture to more active learning methods, though they never investigated whether or how their own behaviors contributed to their students'.

Overall, journals revealed both the type of issues that participants tended to reflect upon and indications of the thinking processes they used. Marcus regularly described events, assessed them, and provided initial clues about the assumptions he would reflect upon. Julia was much more apt to describe an event, indicate what surprised her, and say that she would think further about it. Christian's entries were almost never neutral, varying frequently from elation to deep puzzlement. They revealed a technical approach to solving problems that resulted in success when the issue could be readily framed that way, but frustration when that approach did not end in expected results. Stacey reported few problems in her journal, and, generally found few problems to reflect about her teaching year.

Christian's portfolio was not available, but the thinking described in the other participants', like the journals, corresponded with evidence in more public arenas.

Marcus's portfolio contained a detailed analysis of the connection between the activities he chose and his assumptions about active learning. This corresponded with other evidence that he viewed teaching as an exploration and willingly reflected on ways to adapt to new situations. In the "lessons learned" section of the portfolio, he reported that, despite the concerns with which he entered college teaching, he had discovered how to successfully employ active learning, and welcomed new opportunities to continue experimenting.

Stacey, in contrast, did not respond directly to the "lessons learned" prompt. Rather, she indicated that she was just beginning to understand the importance of active learning techniques to her course goal of student engagement. Perhaps, then, it had taken a year of teaching experience for her to begin to frame a problem about this connection. Given her perceived success in the classroom, this may have been a difficult consideration for her to take seriously. She may have instituted the service learning project initially because she understood conceptually that active learning experiences would benefit learning. Only after seeing her students' positive reactions, however, did she move from knowing *what* to do to discovering *why*. The portfolio may have provided her with an opportunity, for the first time, to make this shift.

With relatively little public reflection in the seminar, and brief analyses in her journal, Julia did not frequently reveal the nature of her reflection. However,

in the portfolio, she engaged in a detailed analysis of her teaching activities, her teaching situation, and her assumptions about learning—indicating an effortful attempt at making the tacit explicit. Unlike Stacey and Marcus, she organized the portfolio as a comparison between the fall and spring semesters, enabling her to trace her learning. Not only did she reflect upon her teaching practice, she also included a meta-analysis of how she thought about thinking about teaching: dissect, adjust, adapt. In Julia's case, the portfolio made public the reflection she employed privately.

Implications for Research. Teaching portfolios of the type completed by participants are often employed as guides to shape reflection in new teachers, but their ubiquity does not obviate the need for further inquiry. As implied above, portfolios may serve as prompts to engage in reflection not demonstrated elsewhere, but what influences this phenomenon has not been thoroughly examined. How do elements of portfolios correspond with the reflective behaviors demonstrated by teachers in other venues? What is the effect of an end-of-experience teaching portfolio requirement on teachers' subsequent understanding of their reflective process?

Conclusions and Solutions

Reflection emerges from practice and returns there. Part of the reflective process is the discovery and analysis of solutions. In this study, solutions were sometimes tested in practice; other times, they were not. In either case, reflection about solutions resulted in new understandings, or reinforced beliefs, about teaching, a result that raises several implications about learning to teach.

Solutions Brought To Practice

Dr. Marcello's call for participants to make an informed change in their spring course was the only time, once teaching began, that they were collectively required to reflect upon the relationship between course goals and practice, and then operationalize their conclusions. While the mandate was uniform, their reactions were not.

Participant responses to Dr. Marcello's challenge were largely characteristic of the way they viewed problems of practice. Marcus wanted to address his deficiency in exposing students to a culturally diverse psychological perspective, something he believed was ethically necessary. Although he did not offer a detailed analysis of his conclusion, this behavior was consistent with his tendency to judge teaching action according to strongly held beliefs. Stacey said that she wanted to correct her inability to meet a course goal of active learning, as she had relied too heavily on lecture. This solution was also consistent with her behavior of articulating what she assumed to be the prescriptive assumptions of the milieu. Similarly, Christian listed deficiencies and described a course structure revision to address them. Unlike Marcus and Stacey, however, he did not justify his proposal by linking it directly to his beliefs or knowledge about learning. He listed, but did not justify, responses to his inability to meet assumed expectations of effective teaching. Characteristically, Christian framed deficiencies in the fall course as problems of omission, and addressed them with simple additions.

Julia's response to Dr. Marcello's request indicated much more complex reflection about the need for ongoing discovery and analysis. Unlike her cohorts, her solution was not a simple "course correction," but an analysis of her own conceptualization of the problem that Dr. Marcello's request initiated. Like the others, she described how course goals were part of the equation in thinking about change. Unlike the others, she regarded those goals as constructions in continual formation. Rather than describe her fall behavior as deficient, she analyzed it according to "a new way of thinking and teaching." Characteristically, she did not frame her fall teaching behavior as a simple problem needing simple adjustment. Although Julia's reflective process was not displayed publicly too often, this example was consistent with the ways she reflected throughout her teaching year.

The behaviors that were actually employed in the spring is an important footnote to Dr. Marcello's call for solutions. Perhaps Marcus did not publicly analyze his choice when he presented it to Dr. Marcello because he had not fully reflected on his own about how and why the choice was a good one. For whatever reason, he did not institute his proposal to incorporate different cultural perspectives in the spring. Stacey, on the other hand, did institute a service learning project, but the way it was structured may indicate that she did not reflect about its contrast with behaviors students adopted in her lecture dominated courses. Students did not engage with the project until the very end of the course, and Stacey reacted with surprise and anger.

Christian believed the deficiencies of his fall course could be addressed through organizational restructuring, and, for the most part, successfully redesigned his course that way. However, the problems he initially framed were not mitigated by his new behaviors, as he described in the spring the same problems he had in the fall. Once again, it appears as though he demonstrated an instrumental response to complex problems.

Given the reflection from which her solution emerged, it is not surprising that Julia's spring class addressed the concerns she hypothesized. Characteristically, she did not see this correspondence as an end. Rather, at the conclusion of the spring course, she described new understandings about how to think about teaching, understandings that she intended to use to adapt to new challenges.

Numerous examples in the data illustrate teaching behaviors that were influenced by reflection that did not indicate the kind of schema change illustrated in Julia's case. For example, both Christian and Stacey, who struggled throughout the year with a tension between prescriptive assumptions about active learning and paradigmatic assumptions about the need for lecture-dominated classes, occasionally described positive changes in student behavior when they did employ discussion and activities. However, they never engaged in reflective analysis that considered causal connections between their lectures and student behavior. This may indicate that practitioners' commitment or ability to radically change behavior results from schema shifts characteristic of particular kinds of reflection.

Implications for Research. Investigation of how and why teachers' behaviors are changed as a result of reflection seems especially significant to the development of informed practice. Long-term study of the teaching and reflective behaviors of teachers may clarify the nature of interactions between thinking and practice, and the ways those interactions change over time. Given that reflection does not always result in changed behavior, inquiry into the factors influencing that phenomenon seems warranted.

Conclusions and Understandings

There are many reasons why teachers may not exhibit overt behaviors that correspond with new understandings they have about practice. New teachers especially face an array of responsibilities that, as Dr. Marcello described, incline them to focus on driving the car rather than thinking too much about a dimming tail light. In this study, a number of cases imply that participant understanding was emergent, but not potent enough to effect changed behavior. In many instances, this situation was marked by emotional outbursts by participants, as they understood just enough to be especially frustrated by their experiences.

Christian's experience with spring semester quizzes is a case in point. Reporting increasingly poor quiz grades, he vacillated between blaming students for not studying and expressing confusion that they were failing what his fall students had succeeded in. For many weeks, he did nothing to mitigate the situation, and, when he did, it was to seek advice from Dr. Marcello. Christian's ultimate response, as directed by Dr. Marcello, successfully addressed the issue. Throughout the process, however, Christian exhibited conflicting understandings

about the need to change questions, Dr. Marcello's framing of the problem, and the reasons why the solution worked.

Marcus as well, who valued trust between teacher and student as a basic tenet of interaction, seemed to exhibit mistrust when he questioned whether students gave him legitimate excuses for missed work or, in the case of the student who attempted to procure a textbook, whether his intentions were ethical. He sought advice from the seminar and supervising faculty on how to respond to these problems, indicating his conflicted understandings about student behaviors and the boundaries he should set.

As described before, Stacey was often ready to explain publicly how over reliance on lecture worked against student learning, yet she did not seem able to change her behavior in that regard. Perhaps some learners must first be able to "try on" new ideas by employing the language used to describe them before experimenting with behaviors.

Implications For Research. Especially for new teachers, it seems appropriate to understand the factors that influence the "tipping point" where new ways of understanding empower them to change behavior. Investigation into the structural and emotional factors that encourage or impede new behavior might inform the construction of learning environments that facilitate this growth. In what ways do assessments and evaluations of new teacher behavior influence practitioners' willingness to experiment with actions they do not fully understand? In what ways can learning theory be employed to understand this process in new teachers?

Discussion

As an ethnography, this study represents a cultural interpretation of the social behavior and interaction of participants as they negotiated the meaning of reflection. Conclusions about the reflection of four people experiencing themselves as college teachers for the first time are necessarily tentative and invite new inquiry. This is so, to begin with, because the ethnographer's conclusions always rest upon a series of decisions to attend to particular elements in the setting and not others. More accurately, guided by a clear sense of purpose (in this case, to understand how participants understood the reflective process) s/he decides which relationships describe the customary social behaviors of participants. This study, then, represents an attempt to use general categories (etic) of elements in the reflective process to describe participants' (emic) experiences.

One difficulty in doing so is that the beliefs, values, experiences and assumptions that the cohort brought to the setting were perhaps the most significant and the least knowable entities in the interaction between participants and their environment. The thick description evidenced in this study, however, warrants a number of hypotheses about how the interaction among those elements influenced the social construction of reflection.

Perhaps the most apparent observation is that participants exhibited a wide variety of reflective behaviors, encompassing the full range of types described in the research. Differences emerged in how problems were framed, what experiences precipitated problem framing, and what influenced subsequent

reflective analysis. It appeared that those participants who regularly described problems as complex demonstrated a belief that reflection was an ongoing discovery process, and were willing to engage in that process. When participants defined problems as technical in nature, they demonstrated a less rigorous analysis of their assumptions and beliefs, especially when problems resisted solution. While individual participants most often reflected upon problems in characteristic ways, they sometimes deviated from that pattern. In other instances, participants modeled the reflective protocol demonstrated in the seminar, but appeared to experiment, rather than fully embrace, that behavior. The variability of participant behavior indicates meaning making about reflection is not static or linear, but depends upon the dialectic relationship between reflectors and their environment.

A central marker of participant understanding of this relationship was the precipitating problem. Which elements of their environment participants identified as problematical and the manner in which those issues were framed often correlated with particular characteristics of reflection, how problems were reported, and the willingness to engage in the complex reflection modeled in the seminar. Additionally, the social interactions of the practicum/seminar context, the influence of supervising faculty and valued pedagogical ideas, and interpretations of student feedback by participants, significantly affected problem framing and subsequent analysis.

The social roles adopted by participants marked in distinct ways the relationships they engaged in with their environment. In this study, participants

were observed in three primary social interactions: with students, with supervising faculty, with other participants. When they interacted with their students as teachers, their identities were constructed from a number of experiences and beliefs that seemed to influence, not only *what* they identified as teaching problems, but the reflective processes used to address them. Differences in the willingness to solicit student feedback, and different capacities to interpret that feedback, affected their ability to locate teaching problems and engage in further reflection. With little experience base, prescriptive and causal beliefs about their teaching roles, and the unpredictable context of the classroom, participants' willingness to reflect was, to some degree, tied to their feelings about competency and ability to maintain control.

Participants also engaged as students in the seminar, in interactions with supervising faculty, and with the pedagogical beliefs of the program. When these elements corresponded with those of participants (or when they engaged in conversations about hypothetical problems) the cohort, for the most part, readily engaged in reframing and analysis. However, when their own experiences or beliefs were challenged by these elements, reflection was sometimes resisted. In some cases, participants named problems but did not seem to engage in complex analysis. At times, participants complied with the expectations of faculty (for example, in making the change to the spring course) after engaging in relatively superficial reflection about the purpose of their action. Challenges to analyze assumptions seemed to be viewed in some instances as opportunities to experiment with new ways of thinking in a safe environment; in others, they were

viewed as threatening. However, it seemed apparent that participants understood their responsibility as students to reflect about teaching. All participants reported that their social interactions as students in the teaching program significantly affected their reflective behavior.

The third social role was not as evident in the study; however, there are indications that it influenced reflective behavior. When participants interacted as peers, they often helped one another analyze the nature of problems. This was most often done, not by referencing pedagogical theory, but by describing hypothetical or recently utilized teaching actions. In some cases, participants countered their peers' problem framing with other interpretations. In this study, participants did not report that other members of the cohort were important influences in their development of reflection.

The instrumental elements of the practicum/seminar program significantly affected the social interactions of participants as they engaged in reflective behavior. The protocol of the journal, teaching portfolio and seminar contributed to the normalization of problem framing. Behaviors of supervising faculty and the structure of the teaching portfolio modeled reflective analysis. Within the seminar, supervising faculty influenced the kind of issues identified as problems, and, especially in the fall semester, ways of thinking about them. Within the dialogue of the seminar, private problems were transferred to the public domain, allowing for a complex interchange of ideas that often transformed the reflective process beyond what individual participants were able to demonstrate on their own. Journals were less conducive to this processing, as they remained in the semi-

private domain, but provided participants with opportunities for initial problem reporting. These problems were often subsequently moved to the public conversation of the seminar, where the analysis not apparent in the journal was likely to occur. The semi-private nature of the teaching portfolio, and the fact that it was completed at the end of teaching, removed it from the public scrutiny of the group. Reflection demonstrated in the portfolio corresponded, in general, to the characteristic reflective behaviors of participants.

The purpose of this study was to investigate the ways in which a culture of reflection was constructed, to answer the question, "What's going on here?" To that end, interpretations of the data operated as taxonomies aimed at understanding the multiple realities of participants as they negotiated the meaning of reflection at a given time in their lives. Reflection, like ethnography, is a recursive process of meaning construction, and complicates rather than simplifies understanding. Both situate the learner in indeterminacy, demand open mindedness and willing suspension of disbelief, and draw on elements of the familiar to apprehend the strange. "Ethnography, with its emphasis on respecting the empirical world, penetrating layers of meaning, facilitating 'taking the role of the other', defining situations and grasping a sense of process, is the natural methodology . . . for seeking to understand the 'art of teaching'" (Woods, 1996, p. 7).

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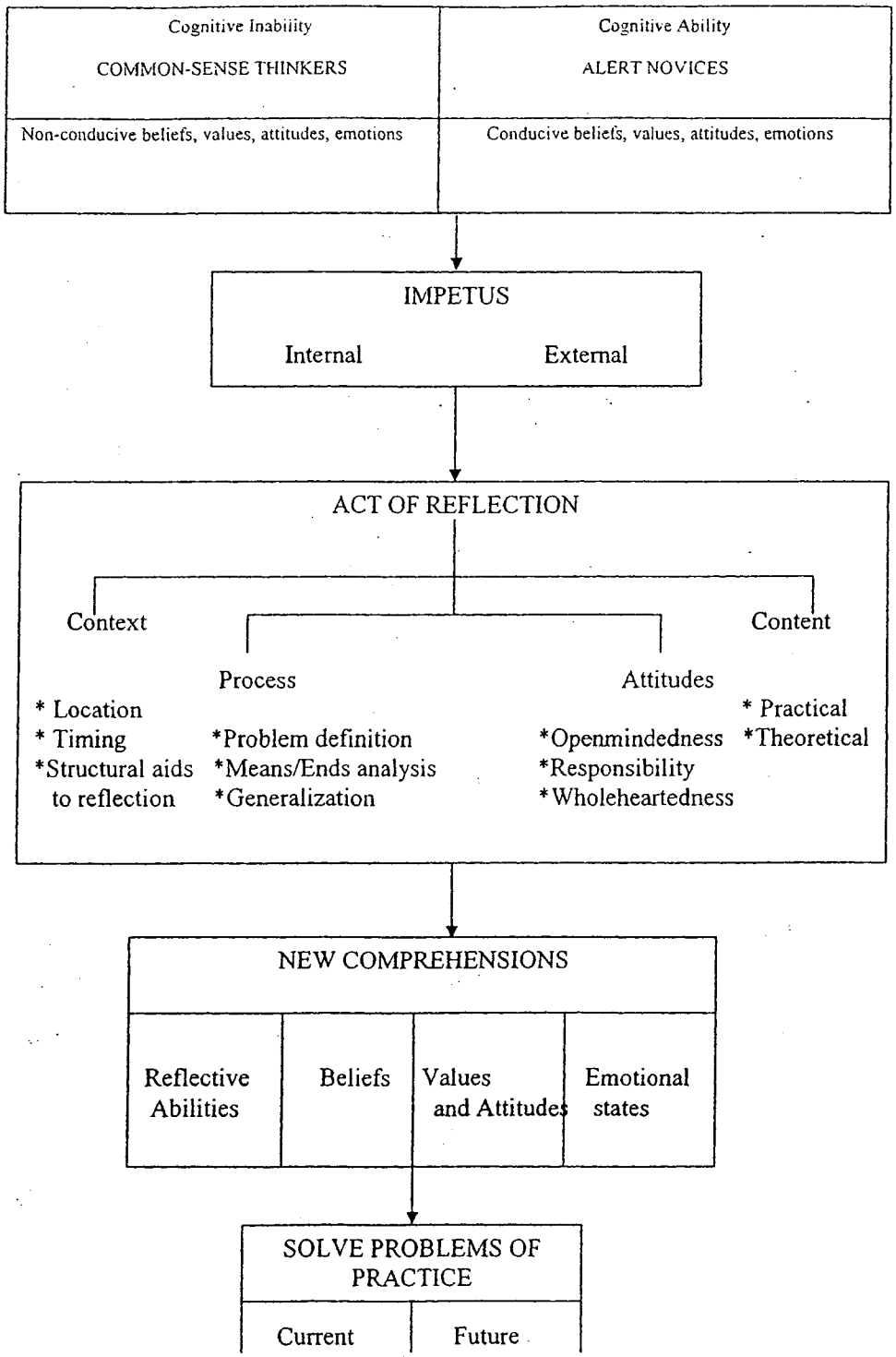
APPENDICES

APPENDIX A: CONCEPTUAL FRAMEWORK FOR REFLECTION

(Adapted from V. K. LaBoskey. (1995). "New" conceptual framework for reflection in preservice teacher education. In J. Calderhead & P. Gates (Eds.), *Conceptualizing reflection in teacher development* (p. 28) London: RoutledgeFalmer)



APPENDIX B: TEACHING MODULE

Introduction to Psychology
Psyc 401
Fall 2005

Module 2: Chapter 4 "The Brain: Source of Mind and Self"

Day 1: Neuroanatomy overview. Plus, methods.

I. Objectives. Day 1. After this material, students should be able to:
   A. Describe the general anatomy of neurons and the nervous system.
   B. Describe the methods used to examine neurons and the brain.
II. Resources. Day 1.
   A. Presentation.
      1. Gazzaniga, M. S., Ivry, R. B., Mangun, G. R. (2002). *Cognitive neuroscience: The biology of the mind* (2nd ed.). New York, NY: W. W. Norton & Company.
      2. Purves, D., Augustine, G. J., Fitzpatrick, D., Hall, W. C., LaMantia, A.-S., McNamara, J. O., & Williams, S. M. (Eds.). (2004). *Neuroscience* (3rd ed.). Sunderland, MA: Sinauer Associates.
      3. Wade, C., & Tavris, C. (2006). *Psychology* (8th ed.). Upper Saddle River, NJ: Prentice Hall.
      4. Worth Psychology instructor's resource CD-ROM. (2004). New York, NY: Worth Publishers. (To accompany David G. Myers *Psychology*, 7th ed.).
   B. Student reading.
      1. Wade & Tavris (2006), p. 100-37 (chapter 4) skipping p. 125-133.
   C. Physical.
      1. Laptop computer, projector, internet connection.
      2. Chapter 4 slides day 1.ppt file.
      3. Markerboard markers.
      4. Mini-quizzes for chapter 4.
III. General outline. Day 1.
   A. Mini-quiz.
   B. Rationale of physiological psychology.
   C. Neurons.
      1. Staining and anatomy. (Objectives A, B.)
      2. Chemical, electrical study. (Objective B.)
   D. Nervous system.
      1. Anatomy. (Objective A.)
      2. Electrical, functional study. (Objective B.)
IV. Detailed outline. Day 1.
   A. Start of a new chapter.
      1. Do the mini-quiz.
      2. Ask students for the big themes in this chapter and concepts that fit in each.

3. Value of physiological psychology if all we seem to be doing is memorizing anatomy. Connections, such as abnormal psychology.

B. Class overviews. Give an overview of the class periods on this topic. Today is on an anatomy framework and basic research methods.

C. The neuron.
   1. Anatomy. Have students draw a neuron in their notes.
   2. Staining, including Golgi stain.
   3. Chemical and electrical recordings, including giant squid axon.

D. The brain on a larger scale.
   1. Anatomy.
      a) Central nervous system versus peripheral nervous system.
      b) Have students draw the brain structures in their notes.
   2. Lesion studies, electrical recording, scanning.

V. Table of specifications. Day 1.

Topic	Multiple-choice		Short answer	
	Factual	Analytical	Factual	Analytical
Neuroanatomy	(12, 13)	0	0	(≈2)
Methods	(14)	0	0	(≈2)
-- Total --	3	0	0	1

VI. Examination items. Day 1.

A. Neuroanatomy: identifying dendrites. (Multiple-choice question 12.)

B. Neuroanatomy: information transmission. (Multiple-choice question 13.)

C. Methods: transcranial magnetic stimulation. (Multiple-choice question 14.)

D. Neuroanatomy/methods: create a question to answer with physiological psychology. (Short answer question 2.)

Multiple-choice.

Question 12.

Which of these parts of a neuron has the primary function of receiving signals?

A. A myelin sheath.
B. A cell body.
C. A dendrite.
D. An axon.

Question 13.

Which of these terms has nearly nothing to do with transmitting signals?

A. A cell body.
B. An endorphin.
C. An electrical synapse.
D. A neurotransmitter.

Question 14.

You're studying the brain of human volunteers and would like to temporarily "shut down" certain areas to see what happens. What technology can do that?

A. Transcranial magnetic stimulation (TMS).
B. The lesion method.
C. An electroencephalogram (EEG).
D. Positron-emission tomography (PET).

Short answer.
Question 2.

In class, we looked at physiology (the brain, et cetera) as one place to get answers to our psychological questions. Write your own new, specific question, on any topic that interests you, that you could try to answer with physiological psychology. Also, choose a physiological method or part of the nervous system that you think could help in answering the question. (Any method/part will do, as long as your choice is somehow connected to your question.)

Multiple-choice answers: 12 C . . . 13 A . . . 14 A.

Short answer grading guidelines:

2. The question should be much more specific than "how does the brain work?" but is not required to use class vocabulary. The choice of method to use or anatomy to study must have some relevance, such as a connection discovered already or a description of how the question would be applied to it.

Day 2: Neurons and reflexes.

I. Objectives. Day 2. After this material, students should be able to:
   A. Describe the nature and propagation of action potentials.
   B. Describe spinal functions such as reflexes.
   C. Explain the functions of the peripheral nervous system.

II. Resources. Day 2.
   A. Presentation.
      1. Purves, D., Augustine, G. J., Fitzpatrick, D., Hall, W. C., LaMantia, A.-S., McNamara, J. O., & Williams, S. M. (Eds.). (2004). *Neuroscience* (3rd ed.). Sunderland, MA: Sinauer Associates.
      2. Salinas, J. (Fall 2004). PSY 332: Behavioral neuroscience: Lectures through exam #1 [On-line]. July 12, 2005. Available: http://homepage.psy.utexas.edu/homepage/class/Psy332/Salinas/Electrophysiology/Electrophys.html (The material could be from: Kolb, B. and Whishaw, I. Q. (2001). *An introduction to brain and behavior*. New York, NY: Worth Publishers.)
      3. Wade, C., & Tavris, C. (2006). *Psychology* (8th ed.). Upper Saddle River, NJ: Prentice Hall.
      4. Worth Psychology instructor's resource CD-ROM. (2004). New York, NY: Worth Publishers. (To accompany David G. Myers *Psychology*, 7th ed.).
   B. Student reading.
      1. Wade & Tavris (2006), p. 100-37 (chapter 4) skipping p. 125-133 (required previously).

C. Physical.
1. Laptop computer, projector, internet connection.
2. Chapter 4 slides day 2.ppt file.
3. Kitchen matches.
4. Piece of foil to receive burnt matches.
5. Candle.
6. Water.
7. Paper towels.

III. General outline. Day 2.
A. Neuronal function.
1. Action potentials. (Objective A.)
2. Transmission at synapses. (Objective A.)
B. Uses of neurons in the greater nervous system.
1. Spinal reflexes and complex pattern generators. (Objective B.)
2. Functions governed by the peripheral nervous system. (Objective C.)

IV. Detailed outline. Day 2.
A. Class overviews. Today goes from neurons to the central nervous system and later the peripheral nervous system.
B. Neuronal function.
1. Action potentials.
a) Graded potentials.
b) Nature of information signaled by an action potential, namely only that the neuron was stimulated.
c) Implications for information consolidation and its encoding as patterns of firing.
2. Transmission at synapses, chemical, electric.
C. Spinal reflexes and central pattern generators.
1. Neurons in the central nervous system, whether the brain or the spine, can control many behaviors on their own.
2. Pain reflexes.
a) Anatomy of reflex, involving sensory and motor neurons.
b) Demonstration with own hand and a candle: first too quickly to notice then slowly enough to require withdrawal.
3. Seemingly complex behaviors, like walking, can also be automated due to central pattern generators and the muscles.
D. Subdivisions of the peripheral nervous system.
1. Somatic nervous system. Already it, as it mediates the reflexes.
2. Autonomic nervous system, sympathetic, parasympathetic.

V. Table of specifications. Day 2.

Topic	Multiple-choice		Short answer	
	Factual	Analytical	Factual	Analytical
Action potentials	(15 text)	0	0	0
Spinal reflexes	0	(16)	0	0
Peripheral nervous system	(17)	0	0	0
-- Total --	1 + 1 text	1	0	0

VI. Examination items. Day 2.

A. Action potentials: neurotransmitters. (Multiple-choice question 15, textbook material.)

B. Spinal reflexes: diagnose an injury. (Multiple-choice question 16.)

C. Peripheral nervous system: somatic nervous system. (Multiple-choice question 17.)

Multiple-choice.

Question 15.

What is the connection between your diet and how your brain works?

A. Substances like tryptophan in protein-rich foods influence creation of neurotransmitters.

B. The hunger drive is maintained, day after day, by central pattern generators.

C. Maintaining a balance of nutrients is one of the big things handled by the cerebral cortex.

D. Substances like choline in egg yolks are poisonous to neurons and cause brain damage.

Question 16.

You are recovering from being injured in an accident. One day, you happen to put your hand down on something hot. Instead of pulling your hand away without thinking, you have to make a conscious effort to get it to lift. Which of the following could you have injured? (And, wow, you need to get more medical attention.)

A. The sympathetic branch of the autonomic nervous system ("fight or flight" system).

B. The loop in the spine that connects sensory/motor neurons for your reflexes.

C. The brainstem, which permits the passage of motor signals.

D. The connection between your sensory neurons and the cerebellum.

Question 17.

What makes up the somatic nervous system?

A. Nerves that run between your skin receptors, spine, and muscles.

B. Widely-branching dendrites that bring in neuronal signals.

C. The brain and spinal cord.

D. Neurons that control the "smooth muscle" of organs, like the stomach.

Multiple-choice answers: 15 A . . . 16 B . . . 17 A.

Day 3: The brain.

I. Objectives. Day 3. After this material, students should be able to:

A. Describe the functions of the different brain structures in general groups, such as the brainstem.

B. Differentiate between the different lobes of the cerebral cortex both in terms of physical layout and function.

II. Resources. Day 3.

A. Presentation.

1. Gazzaniga, M. S., Ivry, R. B., Mangun, G. R. (2002). *Cognitive neuroscience: The biology of the mind* (2nd ed.). New York, NY: W. W. Norton & Company.
2. Purves, D., Augustine, G. J., Fitzpatrick, D., Hall, W. C., LaMantia, A.-S., McNamara, J. O., & Williams, S. M. (Eds.). (2004). *Neuroscience* (3rd ed.). Sunderland, MA: Sinauer Associates.
3. Wade, C., & Tavris, C. (2006). *Psychology* (8th ed.). Upper Saddle River, NJ: Prentice Hall.
4. Worth Psychology instructor's resource CD-ROM. (2004). New York, NY: Worth Publishers. (To accompany David G. Myers *Psychology*, 7th ed.).

B. Student reading.

1. Wade & Tavris (2006), p. 100-37 (chapter 4) skipping p. 125-133 (required previously).

C. Physical.

1. Laptop computer, projector, internet connection.
2. Chapter 4 slides day 3.ppt file.
3. Markerboard markers.
4. Preserved human brain, dissected midsaggitally.
5. Goggles.
6. Rubber gloves.
7. Plastic-covered plate.
8. Paper towels.

III. General outline. Day 3.

A. General brain structures.

1. Cerebellum. (Objective A.)
2. Brain stem. (Objective A.)
3. "Deep brain structures." (Objective A.)

B. Cerebral cortex.

1. Features and lobes. (Objective B.)
2. Function. (Objective B.)

IV. Detailed outline. Day 3.

A. Class overviews. Today is on

B. General brain structures.

1. Cerebellum. Not just a movement center, but a movement correction and learning center.
2. Brainstem.
   a) Controlling the head, connection between spinal cord and brain.
   b) Consciousness.
3. "Deep brain structures."
   a) Thalamus as "sensory relay."
   b) Numerous structures for fundamental continuation of function.

C. Cerebral cortex.

1. General anatomy, sulci, gyri, corpus callosum.

2. Lobes. Have students draw the regions in their notes.
3. Function.
    a) Limited regions that deserve the labels "motor area," "sensory area" et cetera.
    b) Association cortex. Prefrontal cortex, with strong connections between physical anatomy and seemingly-immaterial personality.
4. Human brain demonstration: point out spinal cord, cerebellum, lobes, then inside point out corpus callosum, thalamus.

V. Table of specifications. Day 3.

Topic	Multiple-choice		Short answer	
	Factual	Analytical	Factual	Analytical
Brain structures	(18)	(19)	0	0
Cortical lobes	0	(20)	0	0
-- Total --	1	2	0	0

VI. Examination items. Day 3.

A. Brain structures: function of deep brain structures. (Multiple-choice question 18.)
B. Brain structures: diagnose a birth defect. (Multiple-choice question 19.)
C. Cortical lobes: localize function by cooling the brain (Multiple-choice question 20.)

Multiple-choice.

Question 18.

What controls the autonomic nervous system?

A. The cerebellum.
B. The brain stem.
C. The "deep brain structures."
D. The cerebrum.

Question 19.

You learn about a child who has a birth defect in his brain. His parents noticed the problem because he doesn't seem to learn motor skills correctly. Neither his limbs nor his vision are damaged, but when he reaches for an object he often misses or knocks the object over. It seems that he can't correct for small errors in movement. What region of his brain may have the defect?

A. The cerebellum.
B. The brain stem.
C. The "deep brain structures."
D. The cerebrum.

Question 20.

You've signed up for a study on your brain. Question 14 didn't mention this, but you can also temporarily "shut down" certain areas by directly lowering the temperature on the surface (under the skull, so don't be making jokes about New England), and that's

what they're doing to you. As they go, your hearing suddenly weakens, although all your other senses are as normal. Where did they just cool your cortex?

A. The parietal lobe.
B. The temporal lobe.
C. The frontal lobe.
D. The occipital lobe.

Multiple-choice answers: 18 C . . . 19 A . . . 20 B.

APPENDIX C: TABLE OF SPECIFICATIONS

Topic	Multiple-choice		Short answer	
	Factual	Analytical	Factual	Analytical
Problem-solving	≈ 1 + ≈ 1 text	1	0	0
Reasoning	≈ 1 + ≈ 1 text	1	0	0
-- Total --	1 + 1 text	2	0	0

Topic	Multiple-choice		Short answer	
	Factual	Analytical	Factual	Analytical
Cognitive processes	2 text	0	0	0
Intelligence	1	1	0	1
-- Total --	1 + 2 text	1	0	1

APPENDIX D: TABLE OF SPECIFICATIONS

Topic	Multiple-choice			Short answer
	Definition	Concept	Scenario	
Problem-solving	(10)	0	(11)	0
Reasoning	(12, 13)	0	0	0
Other concepts	(14 text)	(15 text)	0	0
-- Total --	3 + 1 text	1 text	1	0

Topic	Multiple-choice			Short answer
	Definition	Concept	Scenario	
Intelligence	(16, 18 text)	0	(17 text)	(2)
-- Total --	1 + 1 text	0	1 text	1
	Fill-in			

APPENDIX E: IRB APPROVAL LETTER

UNIVERSITY of NEW HAMPSHIRE

July 12, 2004

Fensom, Gail
Education, Morrill Hall
52 Mooers Rd
Nottingham, NH 03290

IRB #: 3258
Study: Social Construction of Teaching
Approval Date: 07/09/2004

The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved the protocol for your study as Exempt as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 101(b). Approval is granted to conduct your study as described in your protocol.

Researchers who conduct studies involving human subjects have responsibilities as outlined in the attached document, *Responsibilities of Directors of Research Studies Involving Human Subjects.* (This document is also available at http://www.unh.edu/osr/compliance/IRB.html.) Please read this document carefully before commencing your work involving human subjects.

Upon completion of your study, please complete the enclosed pink Exempt Study Final Report form and return it to this office along with a report of your findings.

If you have questions or concerns about your study or this approval, please feel free to contact me at 603-862-2003 or Julie.simpson@unh.edu. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,

Julie F. Simpson
Manager

cc: File
William Wansart